ORDER NO.CHM0602003CE
B12

Service Manual

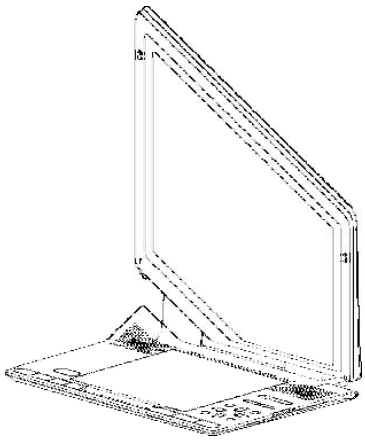
Portable DVD/CD PLAYER

DVD-LS91PP

RAE1905Z-3C Mechanism Series

Colour

(S).....Silver Type



SPECIFICATIONS

Specifications

Operating temperature range:	**+5 to +35°C (+41 to +95°F)**
Operating humidity range:	**5-85% RH (no condensation)**
Region number:	**Region No.1**
Discs played / [8cm (3”) or 12cm (5”)]:	**DVD (DVD-Video)** **DVD-RAM [DVD-VR, JPEG(*4,6,7), MP3(*2,6)]** **DVD-R [DVD-Video, DVD-VR, JPEG(*4,6,7), MP3(*2,6)]** **DVD-R DL (DVD-Video, DVD-VR)** **DVD-RW [DVD-Video, DVD-VR,JPEG(*4,6,7), MP3(*2,6)]** **+R/RW (Video)** **+R DL (Video)** **CD, CD-R/RW [CD-DA, Video-CD, SVCD(*1), MP3(*2, 6), WMA(*3, 6), JPEG (*4,6,7), HighMAT Level 2 (Audio and Image)]** ***1: Conforming to IEC62107** ***2: MPEG-1 Layer3, MPEG-2 Layer3** ***3: Windows Media Audio Ver9.0 L3. / Not compatible with Multiple Bit Rate (MBR)** ***4: Exif Ver 2.1 JPEG Baseline files Picture resolution: between 160× 120 and 6144×4096 pixels (sub sampling is 4:2:2, 4:2:0 or 4:4:4)** ***6: The total combined maximum number of recognizalbe audio and picture contents and groups: 4000 audio and picture contents and 400 groups.** ***7: Extremely long and slender pictures may not be displayed.**
Signal system:	**NTSC**
LCD screen:	**9” -Si, TFT wide-screen LCD**
Composite-video output/ / input:	
Output/input level:	**1Vp-p (75)**
Output/input terminal:	**Mini-jack**
Number of terminals:	**1system (output/input selectable)**
Audio output/input:	
Output/input level:	**1.5Vrms (1kHz, 0dB, 10k)**
Output/input terminal:	**Stereo mini-jack**
Number of terminals:	**1system (output/input selectable)**
Audio performance:	
(1) Frequency response:	
DVD (linear audio):	**4Hz-22kHz (48kHz sampling)** **4Hz-44kHz (96kHz sampling)**
CD audio:	**4Hz-20kHz**
(2) S/N ratio:	
CD audio:	**115dB**
(3) Dynamic range:	
DVD (linear audio):	**98dB**

● CD audio:	97dB
(4) Total harmonic distortion:	
● CD audio:	0.008%
Digital audio output:	
Optical digital output:	Mini optical terminal
Number of terminals:	1system (also used for audio output/input)
Headphone output:	
Output:	Stereo mini-jack
Number of terminals:	2systems
Battery duration:	
*CGR-H713: Option *Room temperature *using headphone	When brightness is set to "-5" while playing DVD: 6 hours (CGR-H712) / /10 hours (CGR-H713) When brightness is set to "0" while playing DVD: 4 hours (CGR-H712) / /7 hours (CGR-H713) When brightness is set to "+5" while playing DVD: 3 hours (CGR-H712) / /5 hours (CGR-H713) When LCD panel is off while DVD playing: 10 hours (CGR-H712) / /15 hours (CGR-H713)
Battery recharge time (at 20°C)	8 hours (CGR-H712) / /10 hours (CGR-H713)
Pickup:	
Wave length:	662nm/ 785nm (DVD/CD)
Laser power:	CLASS 2/ CLASS 1 (DVD/CD)
Power supply:	DC 12V (DC IN terminal) / DC 7.2V (Exclusive battery terminal)
Power consumption (Using included AC adaptor):	13W (Unit only: 10W)
Power consumption in Standby mode (Using included AC adaptor):	0.3W
Power consumption in Recharge mode (Using included AC adaptor):	13W
AC adaptor:	
Power source:	AC 100-240V, 50/60Hz
Power consumption:	28W
DC output:	12V, 1.5A
Car DC adaptor:	
DC output:	12V 2A (Vehicle with 12V battery only)
Battery pack CGR-H712 (lithium ion):	
Voltage:	7.2V
Capacity:	4500mAh

Dimensions (excluding protrusions and battery):	**235.4(W) x 179.2(D) x 46.0*(H) mm [9 9/32" (W) x 7 1/16" (D) x 1 13/16" (H)]**
	***24.3mm (61/64") at lowest point**
	[D=185.0mm (79/32") including battery]
	[H=51.5mm (21/32") including battery]
Mass (including battery):	**approximately 1094g (38.59 oz)**

solder:

This model uses lead free solder (PbF).

Note

Specifications are subject to change without notice.
Mass and dimensions are approximate.

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WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.
MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.
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1. SAFETY PRECAUTIONS

1.1. GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω . / When the exposed metal does not have a return path to the chassis, the reading must be .

1.1.2. LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k , 10 watts resistor, in parallel with a 0.15 F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above

measurements.

6. **The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.**

2. PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as alminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, alminum foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a**

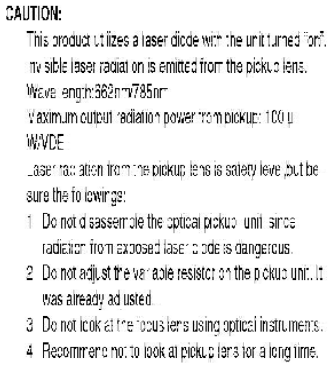
replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).**

3. PRECAUTION OF LASER DIODE


CAUTION:

This product utilizes a laser diode with the unit turned on.

Invisible laser radiation is emitted from the pickup lens.

Wavelength:382nm~785nm

Maximum output radiation power from pickup: 1.00 µ

W/VDE

Laser radiation from the pickup lens is safety level, but be sure the following:

1. Do not disassemble the optical pickup unit since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

4. HOW TO REPLACE THE LITHIUM BATTERY

This model is using a lithium battery for the remote control ass'y.

NOTE:

The lithium battery is a critical component. (Type No.: CR2025 Manufactured by Panasonic.)

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in equipment designed specifically for its use.

Replacement batteries must be of the same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

(For English)

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

(For French)

PRECAUTION

Le fait de remplacer incorrectement la pile peut presenter des risques d'explosion.
Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagees conformément aux instructions du fabricant.

5. LITHIUM ION BATTERY

6. Service caution based on legal restrictions

6.1. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.
The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86 F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of "PbF" is printed either foil side or components side on the PCB using the lead free solder. (See right figure)	

Service caution for repair work using Lead Free Solder (PbF)
- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.(Definition: The letter of "PbF" is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350+-30 degrees C (662+-86 F).

Recommended Lead Free Solder (Service Parts Route.)
- The following 3 types of lead free solder are available through the service parts route.
RFKZ03D01K----------(0.3mm 100g Reel)
RFKZ06D01K----------(0.6mm 100g Reel)
RFKZ10D01K----------(1.0mm 100g Reel)

Note
*** Ingredient: tin (Sn) 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%**

7. HANDLING PRECAUTIONS FOR TRAVERSE DECK

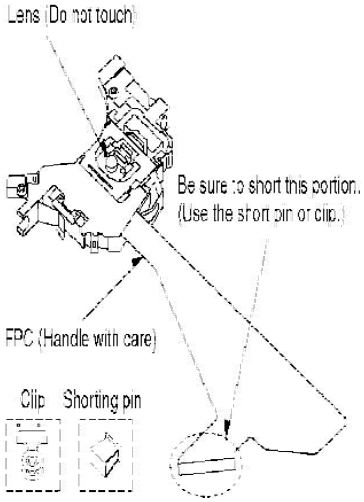
The laser diode in the optical pickup may break down due to potential difference caused by static electricity of clothes or human body.
So be careful of electrostatic break down during repair of the optical pickup.

7.1. Handling of optical pickup

1. **Do not subject the optical pickup to static electricity as it is extremely sensitive to electrical shock.**
2. **To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC Board). / When removing or**

connecting the short pin, finish the job in as short times as possible.

3. Be careful not to apply excessive stress to the flexible board (FPC Board).
4. Do not turn the variable resistor (Laser power adjustment). / It has already been adjusted.



7.2. Grounding for electrostatic breakdown prevention

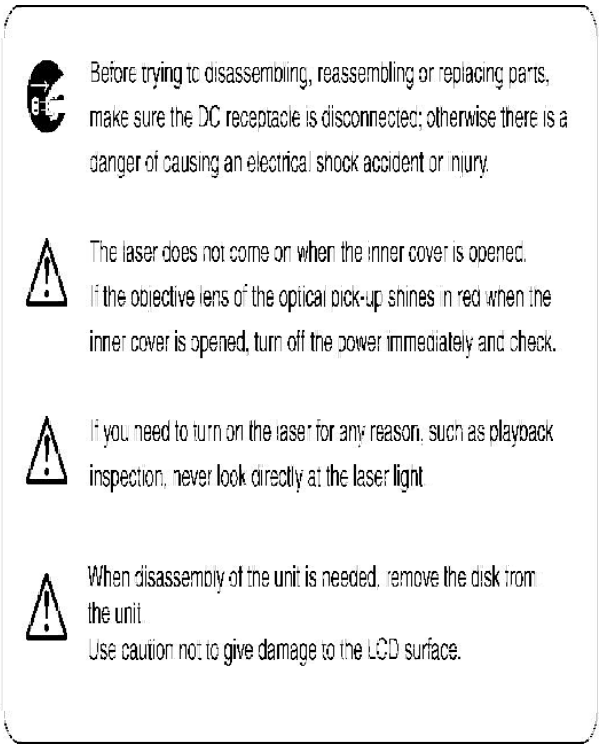
1. Human body grounding / Use the antistatic wrist strap to discharge the static electricity from your body.
2. Work table grounding / Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed and ground the sheet.

   Caution

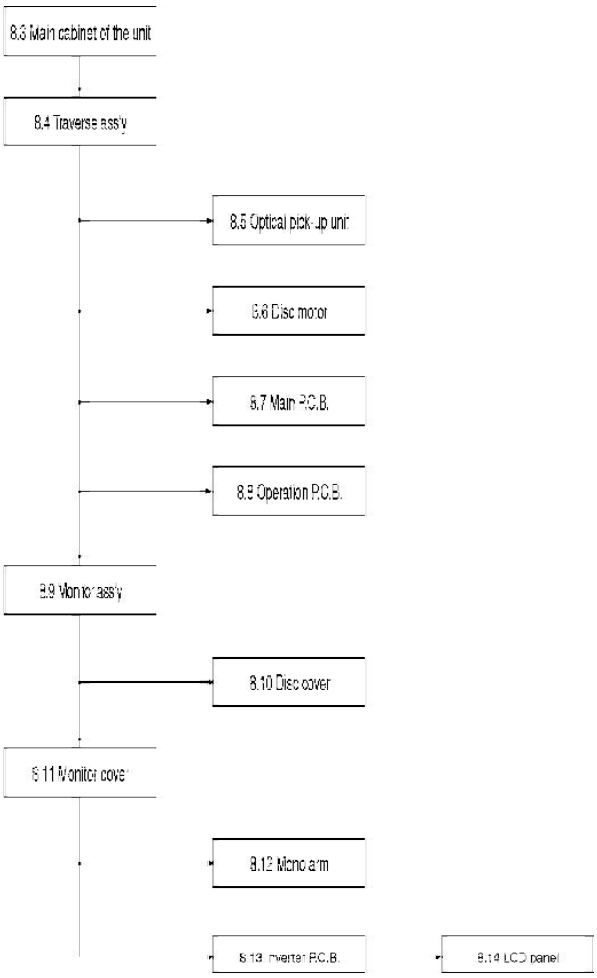
   The static electricity of your clothes will not be grounded through the wrist strap. So take care not to let your clothes touch the optical pickup.

8. DISASSEMBLY, REASSEMBLY AND SERVICE

POSITION


Before trying to disassembling, reassembling or replacing parts, make sure the DC receptacle is disconnected; otherwise there is a danger of causing an electrical shock accident or injury.
The laser does not come on when the inner cover is opened. If the objective lens of the optical pick-up shines in red when the inner cover is opened, turn off the power immediately and check.
If you need to turn on the laser for any reason, such as playback inspection, never look directly at the laser light.
When disassembly of the unit is needed, remove the disk from the unit.
Use caution not to give damage to the LCD surface.

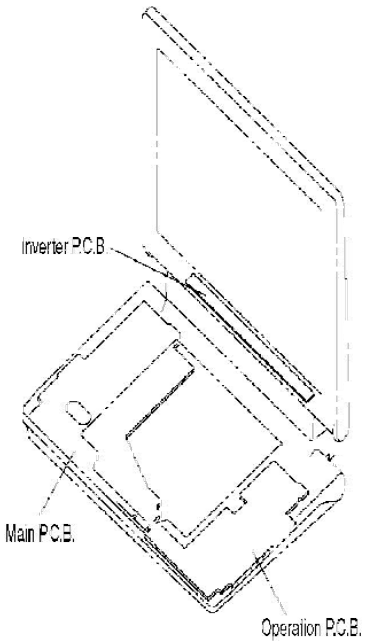
8.1. Disassembly



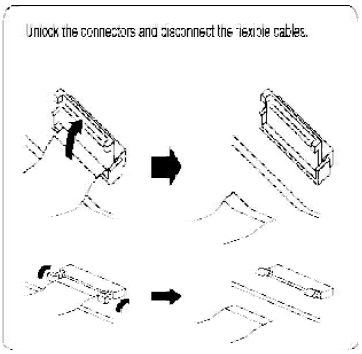
<Caution to be taken when disassembling and reassembling the unit>

- Disconnect the flexible cable from the main P.C.B before disassembling the monitor assembly

8.2. P.C.B. location

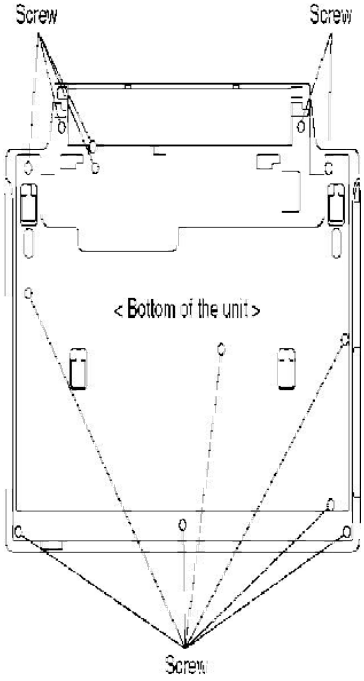


8.3. Main cabinet of the unit

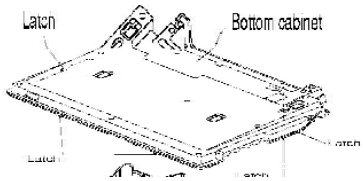


<Removing battery pack>
Release the lock lever and remove the battery pack in the direction of the arrow.

1. Remove the 13 screws from the bottom of the unit.



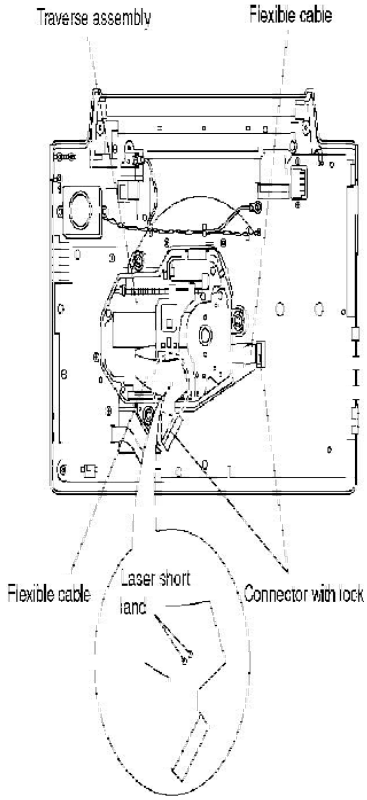
2. Release the latches and remove the bottom cabinet.



8.4. Traverse assembly

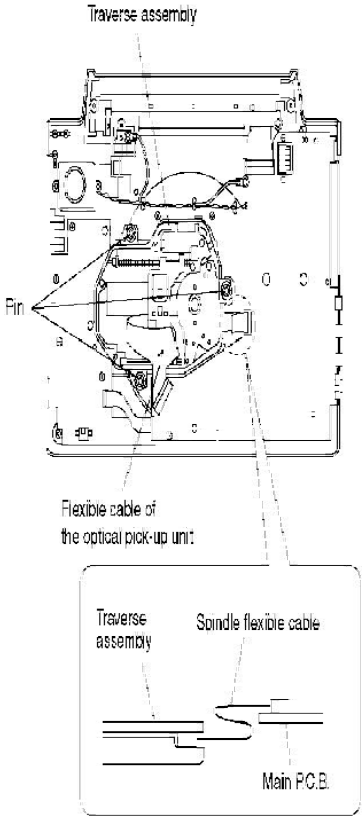
8.4.1. Removing traverse assembly

1. Solder the 2 laser short lands on the flexible cable.
2. Unlock the connectors and remove the flexible cables.



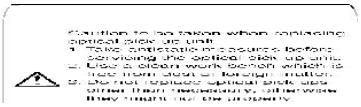
8.4.2. Reinstalling traverse assembly

1. Reinstall the traverse assembly to the specified pin of the unit.
2. Reinstall the flexible cable of the optical pickpup unit and lock it securely.
3. Remove the solder of each laser short land of the flexible cable.
   Caution:
   Remove the solders completely: otherwise the laser diode won't emit light.
4. Reinstall the spindle flexible cable as shown figure.



8.5. Optical pick-up unit

8.5.1. Removing optical pick-up unit

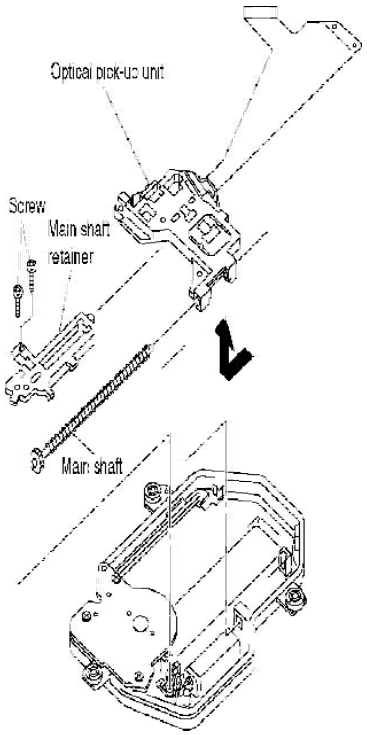


Make sure that the traverse assembly removed before trying to remove the optical pick-up unit. When removing the traverse assembly, solder the two laser short lands on the flexible cable of the optical pick-up unit.

1. Remove the two screws securing the main shaft retainer.

2. Remove the main shaft retainer.

3. Slide the main shaft in the direction indicated by the arrow to remove the optical pick-up unit.



8.5.2. Reinstalling optical pick-up unit

The optical pick-up unit is factory adjusted. Do not touch the adjustment screw.

1. Reassemble the disassembled parts in the reverse order of disassembly.

2. When reinstalling the traverse assembly on the main unit after installing the optical pick-up unit, make sure to remove the solder from each of the two laser short lands on the flexible cable.

Caution:

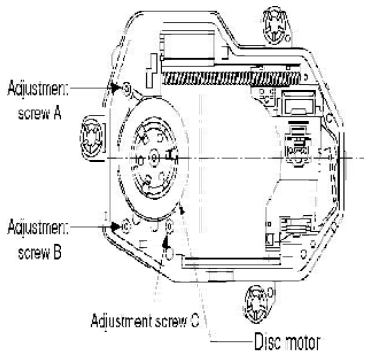
- Remove the solders completely; otherwise the laser diode won't emit light.
- After replacing the optical pick-up unit, check the quality of images played back and make optical adjustment.

8.6. Disc motor

8.6.1. Removing disc motor

1. Remove the adjustment screws A, B, and C.

2. Remove the disc motor.



8.6.2. Caution to be taken when replacing the disc motor

1. **The mounting screws of the disc motor also serve as adjustment screws. When reinstalling the disc motor, first turn the screws A, B, and C as far as they go by usual force to secure them (do not overtighten).**
2. **Back off the adjustment screws A and C two complete turns and secure them.**
3. **Back off the adjustment screw B one and a half turns and secure them.**

   - This makes it nearly possible to play back disks and adjust the jitter.
   Thereafter, adjust the adjustment screws C and A as indicated.

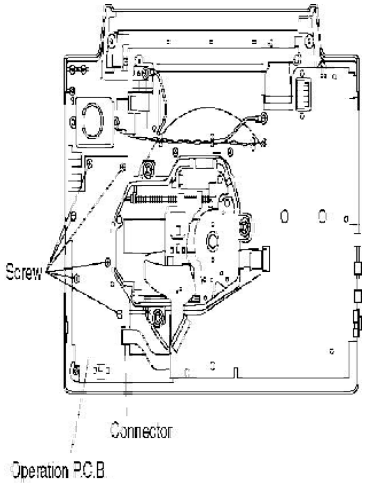
8.7. Main P.C.B.

1. **Unlock the connector and remove the flexible cable.**
2. **Remove the connector.**
3. **Remove the 4 screws and remove the main P.C.B..**

8.8. Operation P.C.B.

1. Remove the connector.

2. Remove the 6 screws and remove the operation P.C.B.



8.9. Monitor assembly

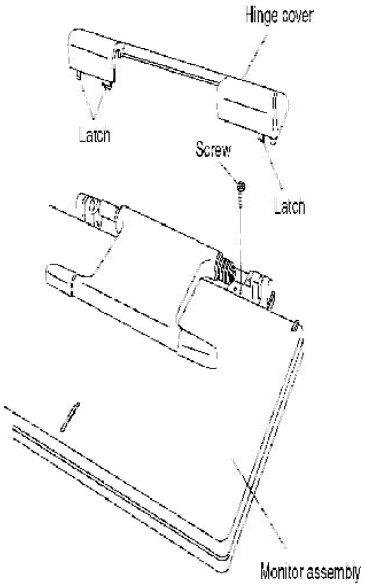
Take care not to get an electrical shock accident by touching the high-voltage part when checking for conduction after disassembly.
Do not give damage to the LCD surface.

1. Unlock the connector and remove the flexible cable.

2. Remove the 3 screws.

3. Release the latches and remove the hinge cover.

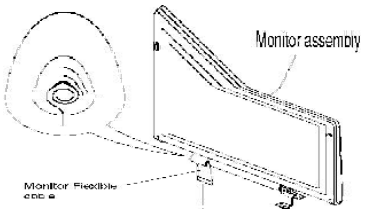
4. Remove the screw and remove the monitor assembly.



<Caution to be taken when installing monitor assembly>

1. Roll the flexible cable as shown figure.

2. Install the monitor assembly on the cabinet.

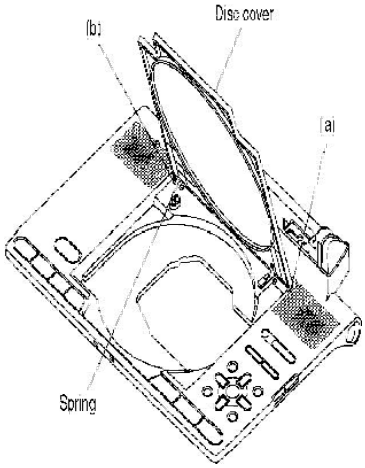


8.10. Disc cover

1. Remove the disc cover in order of (a) and (b).

Caution:

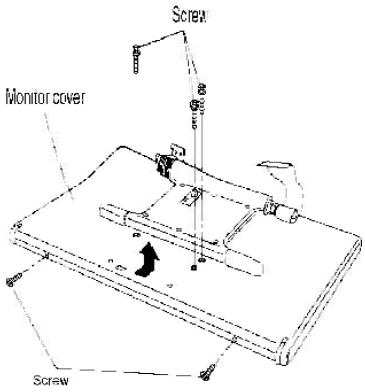
Please don’t lose the spring



8.11. Monitor cover

1. Remove the 5 screws

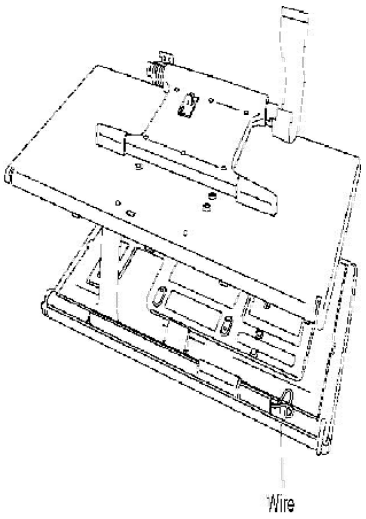
2. Remove the monitor cover into the direction of the arrow.



3. Unlock the connector and remove the flexible cable.

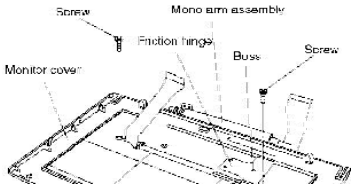
<Caution to be taken when installing monitor cover>

Please do not nip the wire.

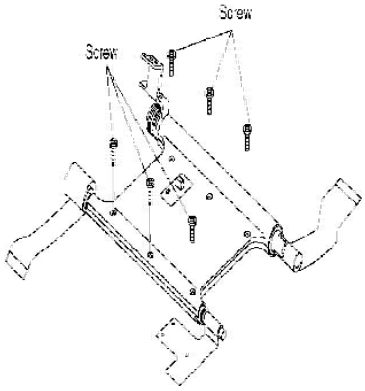


8.12. Mono arm

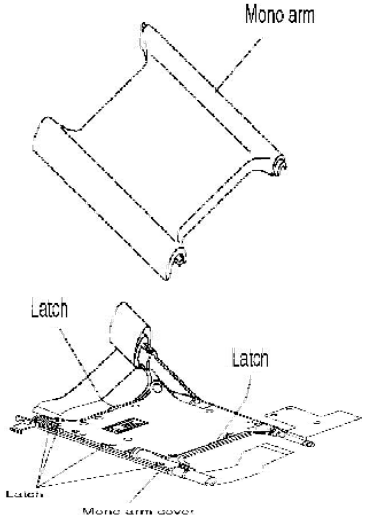
1. **Remove the 2 screws.**
2. **Release the latches and remove the shaft covers.**
3. **Release the friction hinge from boss and remove the mono arm assembly.**



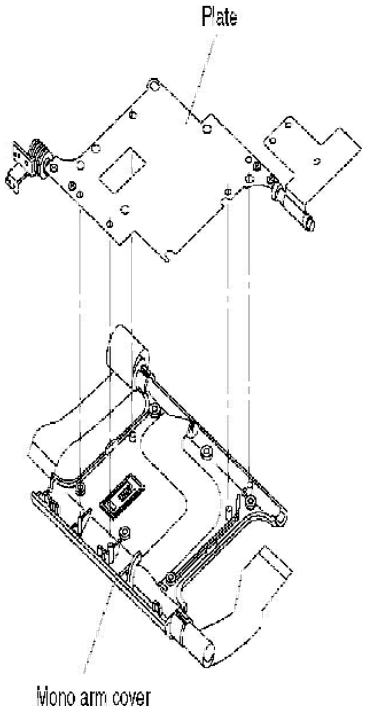
4. **Remove the 6 screws.**



5. Release the latches and remove the mono arm

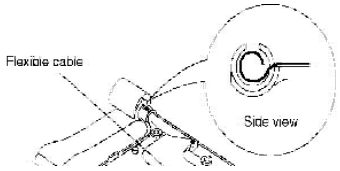


6. Remove the plate.

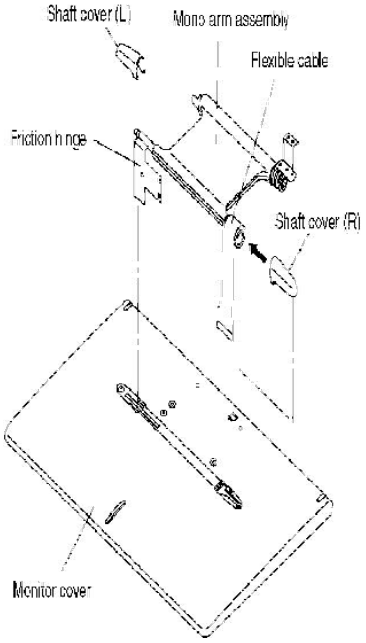


<Caution to be taken when installing mono arm>

1. **Roll the flexible cables as shown figure and install it to mono arm cover.**



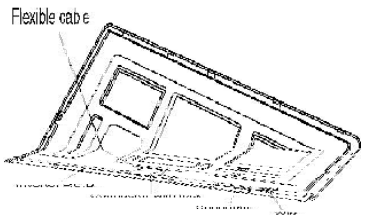
2. **Install mono arm.**
3. **Roll 3 turns of the flexible cable and Install the shaft cover (R) to flexible cable.**
4. **Pass the flexible cable and the friction hinge into the holes in the monitor cover.**
5. **Install the shaft covers to monitor cover.**



8.13. Inverter P.C.B.

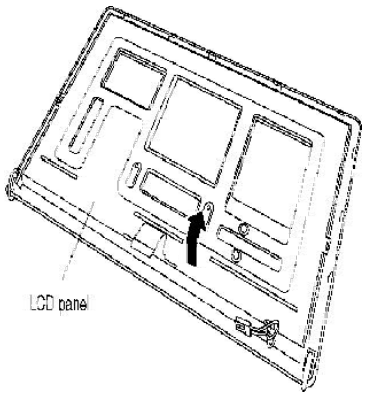
1. Unlock the connector and remove the flexible cable.

2. Remove the connector and remove the inverter P.C.B.



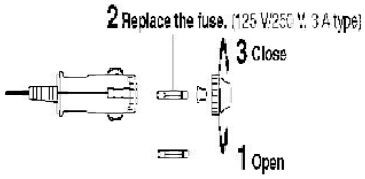
8.14. LCD panel

1. Remove the LCD panel into the direction of the arrow.

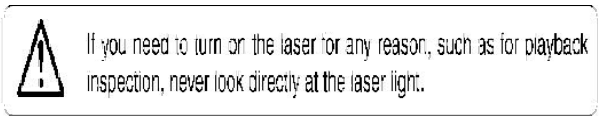


8.15. Replacing the fuse in the car dc adaptor

- Replace only with the specified 125V/250V, 3A fuse. Use of any other type can cause fire.



8.16. Service position



8.16.1. Board checks

1. Connect the main P.C.B and the traverse assembly with an extension cable.

2. Install the traverse assembly to the tilt adjustment jig using three screws and three washers.

Caution:

- Remove the rubber cushion from the traverse assembly to prevent it from getting damaged.

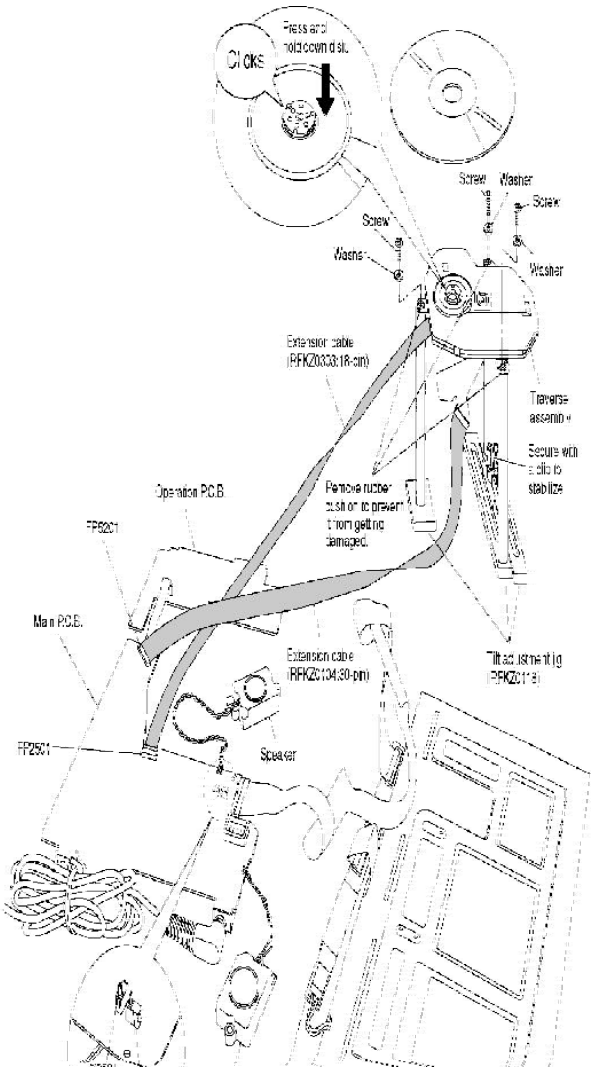
3. Install a dick on the traverse assembly.

Caution:

- Make sure the disk is securely installed on the disk motor.

4. Remove the main P.C.B., operation P.C.B., inverter P.C.B., and LCD panel as shown below.

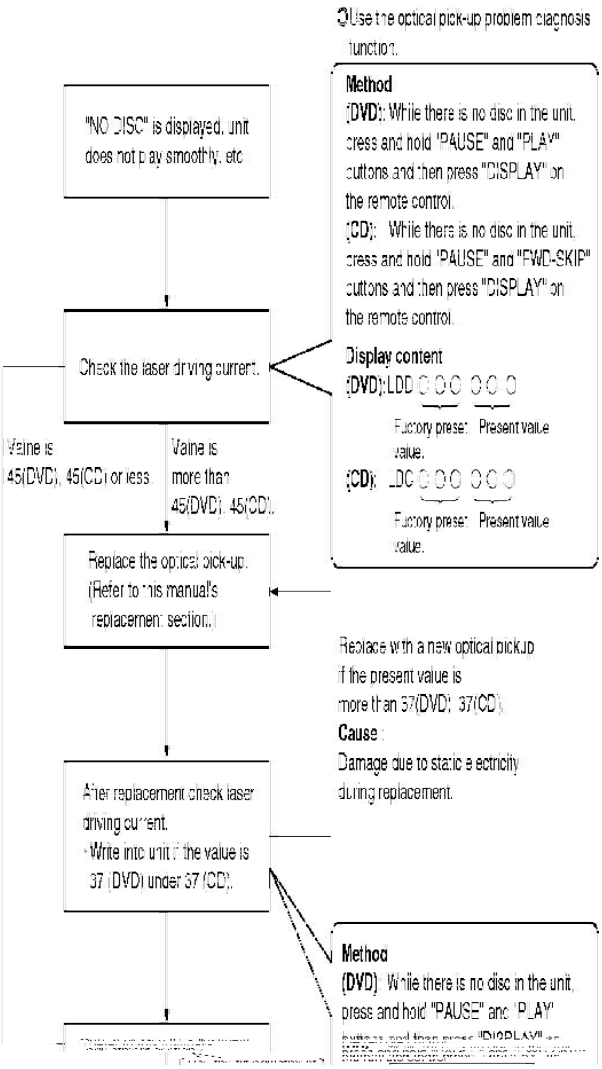
5. The disk cannot be played back with the disk cover removed. Press and hold down the S5201 and S5202. (Secure with cellulose tape.)



9. SELF-DIAGNOSIS FUNCTION AND SERVICE MODE

9.1. Optical Pickup Breakdown Diagnosis

As a new feature, this unit has an “optical pick-up problem diagnosis function” and “a tilt adjustment confirmation function” built in. Use the following procedure to efficiently determine the problem and adjust tilt.If "NO DISC" is displayed, before exchanging the optical pick-up, carry out problem diagnosis first. If the present laser driving current is over 55, the optical pick-up may need to be exchanged.


3)Use the optical pick-up problem diagnosis function.
Method
(DVD): While there is no disc in the unit, press and hold "PAUSE" and "PLAY" buttons and then press "DISPLAY" on the remote control.
(CD): While there is no disc in the unit, press and hold "PAUSE" and "FWD-SKIP" buttons and then press "DISPLAY" on the remote control.
Display content
(DVD):LDD 0 0 0 0 0 0
Factory preset Present value
value.
(CD): LDC 0 0 0 0 0 0
Factory preset Present value
value.
"NO DISC" is displayed, unit does not play smoothly, etc
Check the laser driving current.
Value is 45(DVD), 45(CD) or less
Value is more than 45(DVD), 45(CD).
Replace the optical pick-up. (Refer to this manual's replacement section.)
Replace with a new optical pickup if the present value is more than 37(DVD), 37(CD).
Cause :
Damage due to static electricity during replacement.
After replacement check laser driving current.
Write into unit if the value is 37 (DVD) under 37 (CD).
Method
(DVD) While there is no disc in the unit, press and hold "PAUSE" and "PLAY"

Note:

Carry out diagnosis within 3 minutes of turning the unit on. (The player's current can increase as it warms up, so turn the unit off and allow it to cool down before diagnosis.)

Cautions to be taken when replacing the optical pickup

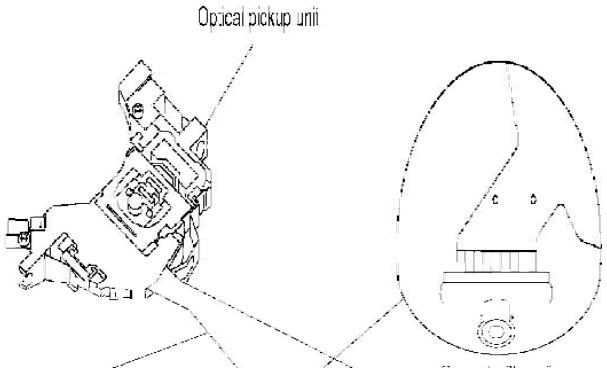
The optical pickup may break down due to the static electricity of human body. Take proper protection measures against static electricity before repairing the parts around the optical pickup. (See the page describing the PREVENTION OF STATIC ELECTRICITY DISCHARGE.)

1. Do not touch the areas around the laser diode and actuator.

2. Do not judge the laser diode with a tester. (The tester will be damaged easily.)
3. It is recommended to use a destaticized soldering iron for short-circuiting or removing the laser diode. (Recommended soldering iron) HAKKO ESD Product
4. Solder the land of the flexible cable in the optical pickup.

Note:

- When using a soldering iron which is not destaticized, short-circuit the terminal face of the flexible case with a clip. After that, short-circuit the land.
- After the repairing work is completed, remove the solder according to the correct procedure shown in this Technical Guide.



9.2. UHF displays

Use the internal service mode for evaluation of malfunctions.

Display Method	Display	Diagnosis
Items displayed when in use	CHECK THE DISC	Focus error
	H01	Inner cover trouble
	H02	Spindle servo error
	H03	Traverse error
	H04	Tracking servo error
	H05	Seek error
Press the "0" button on the remote control while holding down the PAUSE and PLAY buttons on the player. The last error code generated is saved in the EEPROM	F0**	Disc format error
	F1**	Disc code error
	F2**	Decoder LSI error
	F5**	DSC
	F6**	ECC error
	F7**	Microcomputer error
	F8**	Microcomputer error

9.3. Service Mode Table 1

The service modes can be activated by pressing various button combination on the player and remote control unit.

Player buttons	Remote control unit buttons	Application	Note
PAUSE / + / PLAY	0	Displaying the UHF display F_ _ _	Refer to sectio 9.4. Self-Diagn Function (UHF Display).
	5	Jitter check, tilt adjustment *Display shows xx_yyyzz "xx" and "zz" shown to the right have nothing to do with the jitter value. "xx" is the error counter, while "zz" is the focus drive value. Refer to section 11.4. for Optical Pickup Tilt Adjustment Procedure.	Refer to sectio 11.4. Optical Pickup Tilt Adjustment
	6	Checking the region numbers and broadcast system	
	7	Checking the program version	Check the IC30 FLASH ROM program.
	9	Lighting Confirmation Function of Display Tube	
	DISPLAY	Checking the laser drive current	Refer to sectio 8.5. Optical Pic Replacement Procedure.
	PAUSE	Writing the laser drive current value after replacing the optical pickup (do not use for anything other than optical pickup replacement)	

Player buttons	Remote control unit buttons	Application	Note
PAUSE BWD-SKIP PLAY	—	The user setting is returned to the state of the factory shipment.	Refer to sectio 9.6. Initializing DVD player.

9.4. DVD Self Diagnostic Function-Error Code

<Displayed during normal operations>

Error code	Contents	Case of Occurrence	Task	Remarks
U11	Focus Servo error	Dirty disc Incompatible media DVD-R and RW not finalized. Output may result when a pickup error occurs.	Servo	U11 may also re when DVD-R is finalized.
	CHECK DISK		Servo	
U15	DVD-R not finalized		Servo	
U70-1	HDMI/DVI EDID reading error	Occurs when connection is HDMI/DVI and EDID data for the picture receiver cannot be read.	AV	
U70-2	HDMI/DVI non-HDCP compliance	Occurs when connection is HDMI/DVI and the picture receiver is not compliant with HDCP. HDCP:Copyright protection technology Digital video signal encryption method	AV	
U70-3	HDMI/DVI authentication error	Occurs when connection is HDMI/DVI and authentication of the picture receiver (using HDCP) failed.	AV	
H01	Tray loading error	Tray movement error. Unable to open. Unable to close.	Panel	When OPEN: / FOPEN->CLOSE OPEN->H01 When CLOSE: / FCLOSE->OPEN CLOSE->H01
H02	Spindle error	Spindle motor errorFG pulse abnormal. Cable cut, etc.	Servo	
H03	Traverse motor error	Traverse abnormal	Servo	
H05	Seek time out error	Unable to access. TOC reading error, etc. Pickup error, disc error, etc. Output results when a dirty disc is used.	Servo	Changed to U11 from D80 series onward.
H07	Driver IC thermal shutdown	Spindle motor error (short circuit in between brushes) (Applicable to brush-type spindle motors only)	Servo	

<Recorded but not displayed during normal>

Error code	Contents	Case of Occurrence	Task	Remarks
F010	Set value exceeded parental value in the designated country	DVD-Video Disc management data error (Error in management data related to viewing restrictions)	Disc	
F020	TT_SRPT does not existÅiRLBN is 0	DVD-Video/Audio Disc management data error (Error in title-related management data)	Disc	
F021	TT_SRP number is 0	DVD-Video/Audio Disc management data error (Error in title-related management data)	Disc	
F022	Set value exceeds TT_SRP number	DVD-Video/Audio Disc management data error (Error in title-related management data)	Disc	May occur when wrong number is set (when the set number exceeds maximum numbe of titles in the dis
F023	SRP in conformity with VTSN or VTS_TTN does not exist	DVD-Video/Audio Disc management data error (Error in title-related management data)	Disc	
F024	Set value exceeds TT_SRP.PTT_Ns	DVD-Video/Audio Disc management data error (Error in chapter-related management data)	Disc	May occur when wrong chapter number is set (when the set number exceeds maximum numbe of chapters in th disc).
F030	TTU_SRP number is 0	DVD-Video/Audio Disc management data error (Error in title-related management data)	Disc	
F031	Set value exceeds TTU_SRP number	DVD-Video/Audio Disc management data error (Error in title-related management data)	Disc	May occur when wrong title numb is set (when the set number exceeds maximum numbe of titles in the dis
F041	PGCI_SRP number is 0	DVD-Video/Audio Disc management data error (Error in title-related or menu-related management data)	Disc	

Error code	Contents	Case of Occurrence	Task	Remarks
F042	Set value exceeds PGCI_SRP number	DVD-Video/Audio Disc management data error (Error is title-related management data)	Disc	May occur when wrong title numb is set (when the set number exceeds maximum numbe of titles in the dis
F051	Set value exceeds TMAP_SRP number	DVD-Video/Audio Disc management data error (Error in management data for time-search)	Disc	
F052	Set TMAP_SA is 0	DVD-Video/Audio Disc management data error (Error in management data for time-search)	Disc	
F053	MAP_EN number is 0	DVD-Video/Audio Disc management data error (Error in management data for time-search)	Disc	
F060	C_POSIT exists, but PGMAP does not exist in PGC	DVD-Video/Audio Disc management data error (Error in title-related management data)	Disc	
F061	C_POSIT exists, but PG number in PGC is 0	DVD-Video/AudioDisc management data error(Number of chapter is 0 or management data is arranged in violation of specifications.)	Disc	
F062	Set value exceeds PG number in PGC	DVD-Video/Audio When one of the following conditions applies -Disc management data error (Error in title-related or chapter-related management data) -Management data is arranged in violation of specifications.	Disc	May occur when wrong chapter number is set (when the set number exceeds maximum numbe of chapters in th title).
F063	C_POSIT exists, but C_PBIT does not exist in PGC	DVD-Video/Audio Disc management data error (Error in title-related or chapter-related management data)	Disc	
F064	C_POSIT exists, but Cell number in PGC is 0	DVD-Video/Audio Disc management data error (Chapter number is 0)	Disc	
F065	Set Cell number is 0	DVD-Video/Audio Disc management data error (Chapter number is 0)	Disc	

Error code	Contents	Case of Occurrence	Task	Remarks
F066	Set value exceeds cell number in PGC	DVD-Video/Audio Disc management data error (Chapter number is 0)	Disc	May occur when wrong chapter number is set (when the set number exceeds maximum numbe of chapters in th title).
F067	Must be a block cell	DVD-Video/Audio Disc management data error (Data error related to angles in the title)	Disc	
F070	Not NV_PCK data	DVD-Video/Audio Disc management data error (Management data or its arrangement is in violation of specifications)	Disc	
F080	Searched Cell number is not found	DVD-Video/Audio Disc management data error (Chapter number is 0)	Disc	May occur when wrong chapter number is set (when the set number exceeds maximum numbe of chapters in th title).
0xF0C0	Management data error, no playback file	<No contents (management data and playback files do not exist)> Set under the following conditions -When a DVD-Video/VR/Audio management data contains an error -When playback contents do not exist (Search continues to the end and no contents error results when SD and PCF file management data error exists)	Disc	Defined in DEFMAIN.H
0xF0C1	Disallowed region code	DVD-Video Disallowed through region code DVD-Video disc region code different from the player region code was set at the time of playback.	Disc	Defined in DEFMAIN.H May be displaye when EEPROM v falsified.
0xF0C2	PAL playback disallowed	DVD-Video/VR Set when a DVD-Video/VR disc containing a PAL program is set on a model that plays no PAL contents.	Disc	Defined in DEFMAIN.H
0xF0C3	All titles not playable under the parental lock	DVD-VideoSet when viewing restrictions disallows playback.	Disc	Defined in DEFMAIN.H

Error code	Contents	Case of Occurrence	Task	Remarks
0xD0C5	VCD/CDÅFCD-ROM other than CD-DA disallowed	Playback disallowed for a CD not compliant with the player May be set when disc is not CD-DA, and it contains no file such as an MP3/WMA file compliant with the player.	Disc	Defined in DEFMAIN.H This error is rare recorded even w a disc described is set. The error exists for a reas unknown.
F0C6	SD card: FAT error	SD card format not readable The card might have been formatted on a Windows PC.	Disc	Mounted on D86 generation and newer models
F0C7	SD card: physical error	<Physical card error> The SD card may be destroyed physically. Possible insertion of a card other than SD card/MMC Only mini SD card adapter may be inserted	Drive	
F0C8	SD card : master boot record error	SD card is not destroyed physically, but reading not normal. SD card formatting may correct the error.	Drive	Mounted on D86 generation and newer models
F0E5	Firm file reading error at the time of downloading	DFD disc reading error (Firm rewrite data was not read correctly)	Disc	
F103	Illegal Highlight Position	Occurs mainly in cases where the disc violates specifications. Occurs when a location set for highlighting does not exist on a DVD-V disc.	AV	ILL_HLPOS
F4FF	Compulsory initialization failure (time-out)	Compulsory initialization failed despite a wrong EEPROM value	UI	Defined in DEFMAIN.H
F500	DSC error	Servo LSI error	Servo	
F501	DSC not ready Error		Servo	
F502	DSC time-out error	Servo LSI error, servo adjustment error	Servo	
F505	DSC attention error	Servo error	Servo	
F506	Invalid media	Unsupported media, data is unreadable	Servo	
0x9010	DSC command escape	OPEN request	Servo	Not an error
0x9020	Unrecorded field	Entered an unrecorded field on a multi-session CD-R, RW	Servo	Not an error
F0BB	No DVD-R playback	Copyright protection (CSS) exists for DVD-R. DVD-R does not play back because it is an illegal copy.	Drive	Registration
F0BC	No DVD-RAM playback	Copyright protection (CSS) exists for DVD-RAM. DVD-RAM does not play back because it is an illegal copy.	Drive	Registration

Error code	Contents	Case of Occurrence	Task	Remarks
F0BF	No playback because physical layer cannot be detected	Media identification impossible (examples) 1. Detection impossible due to inferior disc non-compliant with specifications 2. CDV or other unsupported media 3. Disc was inserted upside down.	Drive	Registration
F600	Management data is inaccessible because of a demodulation error.	Data necessary for NaviPack and other navigation transfers became impossible to acquire due to a damaged disc and other causes, and playback transfer became impossible.	ECC	Registration
F601	Unstable sector ID was requested	Attempt was made to access a non-existent disc location due to authoring record and other errors.	ECC	Registration
F603	KEYDET acquisition impossible due to demodulation error.	Data for decrypting copyright protection (CSS) became impossible to acquire due to a damaged disc or other causes, playback is not possible.	ECC	Registration
F700	MBX Overflow	Incorrect processing error within microcomputer Occurs mainly in cases where microcomputer software has a problem.	AV	MSG_QOVR
F701	Message command not complete error	Incorrect processing error within microcomputer Occurs mainly in cases where microcomputer software has a problem.	AV	MSG_NOTCOMP
F702	Message command changed	Incorrect processing error within microcomputer Occurs mainly in cases where microcomputer software has a problem.	AV	MSG_CMDCHG
F740	When HDMI device key writing failed	I2C error occurred while writing to Device Key in Tx.	AV	
F750	When the HDMI Device Key was wrong	Occurs when the wrong Device Key is written into Tx.	AV	
F890	Tried to send message during transmission to AV task	Player system error	Disc	Player control software operati is abnormal
F891	Message transmission to AV task failed (Mailbox overflow, etc.)	Player system error	Disc	Player control software operati is abnormal
F893	Flash data falsification error	When an error is found in Flash ROM data	Sys	
F894	EEPROM error	When accessing EEPROM failed	Sys	Subsite value eutered with INITIALI.C immediately
F895	Firm type disagreement (destination mismatch)	When the destination and type of used firm differ	Sys	Defined in DEFMAIN.H

Error code	Contents	Case of Occurrence	Task	Remarks
F896	Firm type disagreement (non-existent jumper)	When a jumper falling under no type is set	Sys	Defined in DEFMAIN.H
F897	Incomplete initialization	When initialization is not performed after firm writing	Sys	Defined in DEFMAIN.H
F898	Disagreement between the AV Dec hardware version and the system controller firm type	When the destination and type of used firm differ	Sys	
F899	Disagreement between system controller and panel controller communication specifications	Mismatch in firm/product numbers for the system controller and panel controller used	Sys Panel	Mounted on D9-generation and newer models
F8A0	Message command is improper	Player system error	Disc	Player control software operati is abnormal
0xB000	Target file was not found	DVD-RAM disc management data error (recorded in the DVD-VR format)	Disc	
0xB001	Disc is not DVD-RAM or RW	DVD disc management data error	Disc	Set when UDF management dat error occurs
0xA002	For hang-up prevention, no error.	CD mediaDisc management data error	Disc	Set for hang-up prevention when the ISO9660 pas table for CD-RO abnormal.

Note:
An error code will be canceled if a power supply is turned OFF.
***1: CPPM is the copy guard function beforehand written in the disc for protection of copyrights.**

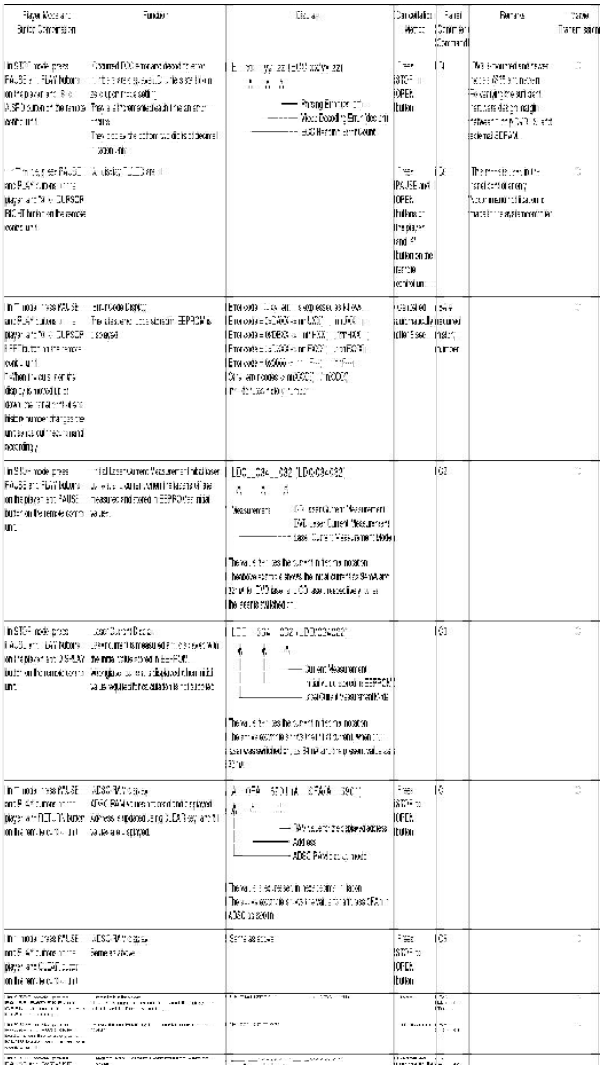
9.5. Last Error Code saved during NO PLAY

Error code	Error Content
F0BF	6) Cannot playback because physical layer is not recoginizable
F0C0	8) DVD: Cannot playback because it is not DVD Video/Adio/ VR
F0C1	9) DVD: Prohibited by the restricted region code
F0C2	A) DVD: PAL restricted playback
F0C3	B) DVD: Parental lock setting prohibits the playback of the entire title
F0C4	C) VCD: Prohibited because it is in PHOTO CD fromat
F0C5	VCD/CD: Prohibited because it is CDROM without CD-DA

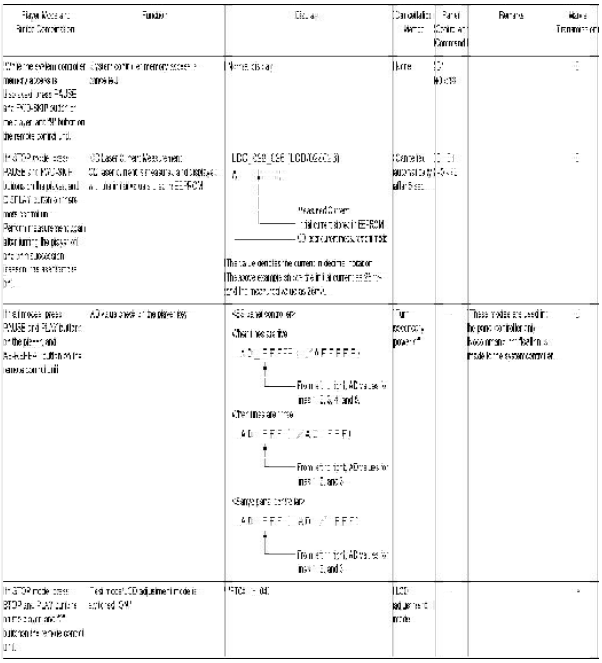
9.6. Service mode table

Pressing various button combinations on the player and remote control unit can activate the service modes.

Player Mode and Button Combination	Function	Display	Cancellation Method	Panel Controller Command	Remarks	Mass Transmission
In STOP mode, press PAUSE and PLAY button on the player and 1 button on the remote control unit.	Reliability Test Mode 1 for [illegible] (playback 20 sec) -> T[illegible] playback (20 sec) -> T[illegible] playback (20 sec) -> STOP -> POWER OFF -> [illegible] sec -> POWER ON -> Tray Open -> Tray Close -> Start from beginning		Turn secondary power off.	-	These modes are used in the panel controller only. No command notification is made to the system controller.	[illegible]
	Reliability Test Mode 1 for [illegible] -> Tray Open -> Tray Close -> READING -> STOP -> Start from beginning (Stops when no disc is in the tray)	123456 Number of trials is displayed as a left-aligned 6-digit figure ("000000" to "999999")				
In STOP mode, press PAUSE and PLAY button on the player and "2" or SUBTITLE button on the remote control unit.	Reliability Test Mode 2 for [illegible] (playback 30 min) -> STOP -> POWER OFF -> 30 sec -> POWER ON -> Tray Open -> Tray Close -> Start from beginning		Turn secondary power off.	-	These modes are used in the panel controller only. No command notification is made to the system controller.	[illegible]
	Reliability Test Mode 2 for [illegible] (playback 30 min) -> STOP -> POWER OFF -> 30 sec -> POWER ON -> Tray Open -> Tray Close -> Start from beginning (Stops when no disc is in the tray)	123456 Number of trials is displayed as a left-aligned 6-digit figure ("000000" to "999999")				
In STOP mode, press PAUSE and PLAY button on the player and "3" or AUDIO button on the remote control unit.	Reliability Test Mode 3 for [illegible] Tray Open -> Tray Close -> Start from beginning		Turn secondary power off.	-	These modes are used in the panel controller only. No command notification is made to the system controller.	[illegible]
	Reliability Test Mode 3 for [illegible] (playback [illegible] sec) -> T[illegible] playback ([illegible] sec) -> STOP -> Tray Open -> Tray Close -> Reading -> Start from beginning (Stops when no disc is in the tray)	123456 Number of trials is displayed as a left-aligned 6-digit figure ("000000" to "999999")				
In STOP mode, press PAUSE and PLAY button on the player and "4" or ANGLE button on the remote control unit.	Reliability Test Mode 4 for [illegible] (playback 20 sec) -> T[illegible] playback (20 sec) -> Start from beginning		Turn secondary power off.	-	These modes are used in the panel controller only. No command notification is made to the system controller.	[illegible]
	Reliability Test Mode 4 for [illegible] (playback [illegible] sec) -> T[illegible] playback ([illegible] sec) -> Start from beginning	123456 Number of trials is displayed as a left-aligned 6-digit figure ("000000" to "999999")				
In STOP mode, press STOP and PLAY button on the player and "5" button on the remote control unit.	Reliability Test Mode 5 for [illegible] (playback 150 sec) -> T[illegible] playback (150 sec) -> T[illegible] playback (150 sec) -> STOP -> POWER OFF -> [illegible] sec -> POWER ON -> Tray Open -> Tray Close -> Start from beginning		Turn secondary power off.	-	This mode is used in the panel controller only. No command notification is made to the system controller. This is a test mode exclusively for [illegible] use. Operation check of this mode is not performed in [illegible].	[illegible]
	Reliability Test Mode 5 does not exist for [illegible].			-		
In PLAY mode, press PAUSE and PLAY button on the player and "5" or TITLE button on the remote control unit.	Jitter check without [illegible] [illegible] measured and displayed. Measurement is repeatedly done in the cycle of 1 second. Reading Error Counter counts [illegible] [illegible] setting. When correcting in the target block [illegible] the counter advances by one [illegible] [illegible] through reading [illegible] the counter advances [illegible] [illegible]	[illegible] — Focus Drive Value — Reading Error Counter [illegible] — Jitter Check Mode Jitter Rate is shown in decimal notation [illegible] [illegible] [illegible]	Press STOP or OPEN button.	[illegible]	[illegible] was produced [illegible] [illegible] for [illegible] [illegible]	[illegible]
In STOP mode, press PAUSE and PLAY button on the player and "9" or [illegible]	Region Display	[illegible]	Cancelled automatically after 5 sec.	[illegible]		[illegible]



Player Mode and Button Combination	Function	Display	Cancellation Method	Panel (Controller Command)	Remarks	Status Transmission
In all modes, press PAUSE and BWD-SKIP buttons of the player, and "9" button on the remote control unit	Debug variable display mode. List of debug variables is displayed on GUI	[Normal]	Turn secondary power off. Press PAUSE and BWD-SKIP buttons of the player and "9" button on the remote control unit	[illegible]		[illegible]
While a debug variable is displayed, press PAUSE and BWD-SKIP on the player and "9" button on the remote control unit	Debug variable display mode is cancelled	[Normal display]	[illegible]	[illegible]		[illegible]
In PLAY mode, press PAUSE and FWD-SKIP buttons on the player, and "1" button on the remote control unit	Jitter check with monitor output. Jitter rate is measured and displayed. Measurement is repeated once in the cycle [illegible] second. Reading error counter starts from zero upon reseeking. When data reading in the target block fails, the counter advances by one increment. When the failure is caused by a minor error that can be corrected through retrying read [illegible], the counter advances [illegible]. When the error cannot be corrected, the counter may [illegible].	[illegible] / Future Drive Value / Reading Error Counter / Jitter Rate / Jitter Check Mode. Jitter Rate is shown in decimal notation to one place of decimal	Press STOP or OPEN button	[illegible]	[illegible] was established [illegible] available for reading [illegible] display [illegible] monitor output and for replacing only one [illegible]	[illegible]
In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "4" button on the remote control unit	Device Name display. Versions for DVI series displayed [illegible]. HDMI and [illegible] as [illegible] in SSB and other modes [illegible]	[SP type] [DVI_ [illegible]] [Display] [G] [Cnd] (Common name) DVI_ [illegible] : [illegible] DVI_ 2103 : [illegible] [illegible] DVI_ 2007 : [illegible] [illegible] DVI_ 2201 : [illegible] DVI_ 3201 : [illegible] [Flash ROM type] [F [illegible]] Display : Flash Maker F_A : AMD Maker F_I : INTEL Maker F_S : SST Maker F_-- : Undefined [illegible] identification for Flash ROM type may not be possible without initialization	Display is [illegible] other [illegible] cancelled [illegible] by the [illegible]	[illegible]		[illegible]
In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "5" button on the remote control unit	Timer 1 check. Laser using time periods are measured separately for DVD laser and CD laser	[T [illegible]] DVD laser and CD laser using times are displayed left and right, respectively. Time is displayed as a 4-digit figure in decimal notation using 10 hours as a unit. "0000" will follow "9999"	Cancelled automatically after 5 sec.	[illegible]		[illegible]
While the laser using time is displayed, press STOP and FWD-SKIP buttons on the player, and "5" button on the remote control unit	Timer 1 reset. Laser using time	[T [illegible]]	Cancelled automatically after 5 sec.	[illegible]		[illegible]
In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "6" button on the remote control unit	Timer 2 check. Shows [illegible] using time	[T2 [illegible]] Time is displayed as 8-digit decimal figures. "00000" will follow "99999"	Cancelled automatically after 5 sec.	[illegible]		[illegible]
[illegible]	Timer 2 reset [illegible]	[T [illegible]]	Cancelled [illegible]	[illegible]		[illegible]



9.7. Lens cleaning

When cleaning the lens, use the lens cleaner which product part No. SZZP1038C.

10. SERVICE PRECAUTIONS

10.1. Recovery after the dvd player is repaired

- When FROM or main P.C.B. is replaced, carry out the recovery processing to optimize the drive.
Playback the recovery disk to process the recovery automatically.

- Recovery disc (Product number: RFKZD03R005)

- Performing recovery

1. **Load the recovery disc RFKZD03R005 on to the player and run it.**
2. **Recovery is performed automatically. When it is finished, a message appears on the screen.**
3. **Remove the recovery disc.**
4. **Turn off the power.**

Note:

This unit requires no initialization process carried out after the traditional DVD players were repaired. When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item of "Initialization" in 9.6. is carried out. Write down the contents of the setting before recovery processing, and reset the player.

10.2. Firmware version-up of the DVD player

- The firmware of the DVD player may be renewed to improve the quality including operationability and playerbility to the substandard discs.processing to optimize the drive.

The recovery disc has also firmware version-up.

- After version-up, recovery processing is executed automatically.

- Part number of the recovery disc for version-up will be noticed when it is supplied.

- Updating firmware

1. **Load the recovery disc that is supplied to the player and run it.**
2. **Firmware version of the player is automatically checked. Appropriate message appears whenever necessary.**
3. **Using remote controller's cursor key, select whether version updating is to be done or not. (Selection of Yes/No)**
4. **a. If Yes is selected, version updating is performed.**
   b. If No is selected, only recovery is performed.
5. **a. When updating is finished, remove the disc according to the message appearing on the screen.**
   b. Remove the disc according to the message appearing on the screen.
6. **Turn off the power.**

Note:
If the AC power supply is shut out during version-up due to a power failure, the version-up is improperly carried out.
In such a case, replace the FROM and carry out the version-up again.

11. ADJUSTMENT PROCEDURES

<Caution>

Be sure to take static electricity countermeasures before adjusting the optical system. Adjust the optical systems according to the prescribed procedure.

11.1. Service Tools and Equipment

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S15AS or DVDT-S01
Inspection	Extension cable (Traverse ass'y to main P.C.B.)	RFKZ0104 (30Pin)
	Extension cable (Traverse ass'y to main P.C.B.)	RFKZ0303 (18Pin)
	Tilt adj. jig	RFKZ0118
Others	Screw lock	RZZ0L01
	Grease	JGS0101
	Lubricating oil	RFKXGUD24
Confirmation	CD test disc	PVCD-K06 or any other commercially available disc
	VCD test disc	PVCD-K06 or any other commercially available disc
	Recovery disc	RFKZD03R005

11.2. Important points in adjustment

11.2.1. Important points in optical adjustment

- Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit

2. Disc motor

3. Traverse motor

4. Optical pickup peripheral parts (such as rail)

Notes
Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, make adjustment if there is a noticeable degradation in picture quality.
Optical adjustments cannot be made inside the optical pickup.

11.2.2. Important points in electrical adjustment

- Follow the adjustment procedures described in this Manual.

11.3. Storing and Handling Test Discs

-Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc., after use.
2. Handle discs carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store discs in a cool place where they are not exposed to direct sunlight or air from air conditioners.
3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustments.
4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

11.4. Optical adjustment

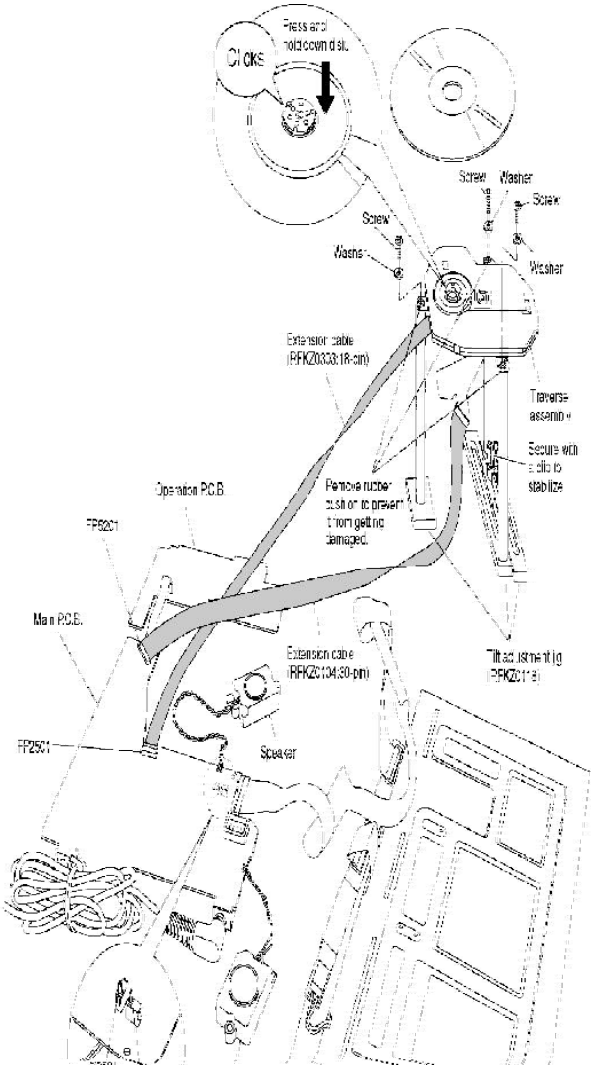
11.4.1. Optical pick gate adjustment

Measurement point	Adjustment point	Mode	Disc
-----	Tangential adjustment screw (Adjustment screw A) Radial tilt adjustment screw (Adjustment screw B)	Tracking servo "ON" Tracking servo "ON"	DVDT-S01/S15AS
Measuring apparatus		Adjustment value	
None (Use the service indication on the main unit)		Adjust the jitter value to the minimum level.	

Remove the solder shorts before trying to make the adjustment.

11.4.1.1. Preparations

1. **Connect the main P.C.B. to the traverse ass'y with the extension cable.**
2. **Install the traverse ass'y to the tilt adjustment jig with three screws and three washers.**
   Caution
   Remove the rubber cushion of the traverse ass'y.
3. **Install the traverse ass'y to the disc.**
   Caution
   Make sure the disc is installed on the disc motor securely.
4. **Disassemble the Main P.C.B., Operation P.C.B., Inverter P.C.B. and LCD panel as shown in figure below.**
5. **The disc cannot be played back with the Disc cover attached. Press and hold down the S5201 and S5202 (Secure with cellulose tape)**

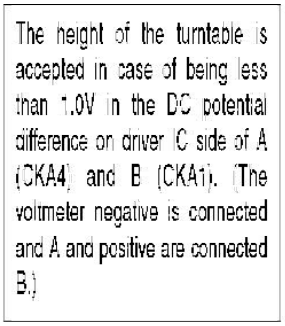


11.4.1.2. Adjustment

1. Play back the disc (DVDT-S01/S15AS) and make sure the RF signal is

outputted.

2. **Play back the areas within a radius of 40 ± 1 mm of the disc (middle circumference).**
3. **Turn the adjustment screw C to minimize the jitter value in the radial direction.**
   (*Once turn the screw to the full position and then back off. You should finish tightening in the tightening direction.)
4. **Turn the adjustment screw A to minimize the jitter value in the tangential direction.**
   (*Once turn the screw to the full position and then back off. You should finish tightening in the tightening direction.)
5. **DISC height measurement (Measure the middle of the deflection of the disc and motor surface.)**


The height of the turntable is accepted in case of being less than 1.0V in the DC potential difference on driver IC side of A (CKA4) and B (CKA1). (The voltmeter negative is connected and A and positive are connected B.)

***If the measured height is out of range, adjust to the specified value**

using the adjustment screws A, B, and C (by the same angle).

11.4.1.3. Checking after adjustment

Play back the test disc and ordinary discs to make sure that there is not any deterioration of image quality or missing of sound at the inner, middle, and outer circumferences.

11.5. Electrical adjustment (LCD)

[How to enter into the LCD panel adjustment mode]
Play back the specified video signal (10 steps, color bas signal).
Press and hold down "Back skip" and "Pause" of the main unit at the same time while pressing "Menu" on the remote control unit.
[The DVD player is now in the FT02 mode]
Press the "Forward skip button twice to enter into the FT04 mode (LCD panel adjustment mode).
Press the "Playback" button to play back the signal which has been played back before stopping and then, press the "Pause (still) button.
[How to exit to normal mode]
(Exit the F4 mode)
1. Turn off the primary power supply (Remove the DC power supply).
Turn on the power supply. Press the "Stop" to stop the system.
Press "Cancel" on the remote control unit (The Cancel key is enabled only when the system is stopped.)

- **Whenever the LCD panel is replaced, make the following checks and adjustments.**
- **Press the "Enter" key and fix the settings.**
- **When the EEPROM" (IC3002) of the Main P.C.B. is replaced, call up the LCD Panel adjustment mode (FT04) and execute the AUDIO on the remove control unit and then check the condition of the screen. Make adjustments as necessary.**

11.5.1. Adjusting VCO oscillation frequency

Adjustment is required when	Check point	
The synchronization of the LCD screen is irregular after any VCO-related circuit part is replaced	TP8201	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “1” on remote control unit.	DVD player/ remote control unit	DVD player/ remote control
Details of adjustment	Input video signal	
Press “ “ and ” ”buttons on remote controller, set the right side number to “71”.	-----	

11.5.2. Adjusting DC offset of impressed voltage

Adjustment is required when	Check point	
Noise such as horizontal stripes is found on the screen.	TL8401	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “3” on remote control unit.	DVD player/ remote control unit △	DVD player/ remote control ▽
Details of adjustment	Input video signal	
Press “△“and” ▽ ”buttons on remote controller, set the right side number to “Al”.	10step monochrome	

11.5.3. Adjusting white balance red/subcontrast red

Adjustment is required when	Check point	
Remarkable deviation in white balance is found	TL8602	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “6” on remote control unit.	DVD player/ remote control unit	DVD player/ remote control
Details of adjustment	Input video signal	

(White balance) Press “ “and “ “ buttons on remote controller, set the number of center to “80”. (Sub contrast) Press “ “ and “ “ buttons on remote controller, set the right side number to “7E”.	10step monochrome

11.5.4. Adjusting whitebalance blue/subcontrast blue

Adjustment is required when	Check point	
Remarkable deviation in white balance is found	TL8604	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “7” on remote control unit.	DVD player/ remote control unit	DVD player/ remote control
Details of adjustment	Input video signal	
(White balance) Press “ “and “ “ buttons on remote controller, set the number of center to “71”. (Sub contrast) Press “ “and “ “ buttons on remote controller, set the right side number to “84”.	10step monochrome	

11.5.5. Adjusting amplitude of impressed voltage

Adjustment is required when	Check point	
-----	TL8401	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “2” on remote control unit.	DVD player/ remote control unit	DVD player/ remote control
Details of adjustment	Input video signal	
Press “ “ and “ “ buttons on remote controller, set the right side number to “15”.	10step monochrome	

11.5.6. Adjusting pedestal

Adjustment is required when	Check point	
-----	TL8603	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “4” on remote control unit.	DVD player/ remote control unit	DVD player/ remote control
Details of adjustment	Input video signal	
Press “ “ and “ “ buttons on remote controller, set the number of center to “91”.	10step monochrome	

11.5.7. Adjusting contrast

Adjustment is required when	Check point	
-----	TL8603	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “4” on remote control unit.	DVD player/ remote control unit	DVD player/ remote control
Details of adjustment	Input video signal	
Press “ “ and “ “ buttons on remote controller, set the right side number to “71”.	10step monochrome	

11.5.8. Adjusting TINT

Adjustment is required when	Check point	
-----	TL8604	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “5” on remote control unit.	DVD player/ remote control unit	DVD player/ remote control
Details of adjustment	Input video signal	
Press “ “ and “ “ buttons on remote controller, set the number of center to “75”.	75% color bar	

11.5.9. Adjusting color

Adjustment is required when	Check point	
-----	TL8604	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “5” on remote control unit.	DVD player/ remote control unit	DVD player/ remote control
Details of adjustment	Input video signal	
Press “ “ and “ “ buttons on remote controller, set the right number to “81”.	75% color bar	

11.6. Electrical check (Video output check)

11.6.1. Checking video output (composite signal)

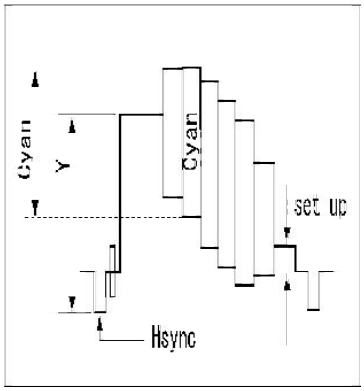
Check point	Mode	Disc
Video output terminal	Color bar playback (75%)	DVDT-S15AS
Measuring apparatus	Check value	
Oscilloscope	Y: 1000 mV ± 100 mV Cyan: 650 mV ± 100 mV	

Purpose: Keep the interchangeability of video signal output

1. Terminate the composite signal of the video output terminal with 75 and input into the oscilloscope.
2. Select color bar 75% from the titles of the DVD test disc and play back.
3. Check that the composite signal output is the following value:

Y=1000mV±100mV

Cyan=650mV±100mV



12. Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMP OUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK

INITIAL/LOGO		ABBREVIATIONS
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPH1~3	CLOCK PULSE SOURCE DRIVE
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPV	GATE DRIVER CLOCK PULSE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/ 40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	
	FG	FOCUS ERROR AMP OUTPUT
	FSC	FREQUENCY GENERATOR
	FSCK	FREQUENCY SUB CARRIER
		FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	
	IREF	INTERPOLATION FLAG
	ISEL	I (CURRENT) REFERENCE
		INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	
	MDQ0~UP	MEMORY SERIAL COMMAND DATA
	MDQM	MEMORY DATA INPUT/OUTPUT
	MLD	MEMORY DATA I/O MASK
	MPEG	MEMORY SERIAL COMMAND LOAD
		MOVING PICTURE EXPERTS GROUP

INITIAL/LOGO		ABBREVIATIONS
O	ODC	OPTICAL DISC CONTROLLER
	OEH	SOURCE DRIVER OUTPUT ENABLE
	OEV 1, 2	GATE DRIVER OUTPUT ENABLE
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK	CHANNEL PLL CLOCK
	PLLOK	PLL LOCK
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVE A
	PWMOA, B	PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET
		RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENT OUTPUT
	SEN	SELECT CLOCK
	SIN1, 2	SERIAL PORT ENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIAL PORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUB CODE Q DATA READ
	SRMADR	CLOCK
	SRMDT0~7	SERIAL DATA
		SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA
		STREAM DATA INPUT ENABLE
	STH	SOURCE START PULSE
	STSEL	STREAM DATA POLARITY
	STV	SELECT
	STVALID	GATE DRIVER SCAN START
	SUBC	PULSE
	SBCK	STREAM DATA VALIDITY
	SUBQ	SUB CODE SERIAL
	SYSCLK	SUB CODE CLOCK
		SUB CODE Q DATA

INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON

		SUB CODE & DATA		TRON	TRACKING ON
		SYSTEM CLOCK		TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING
	VDD	BALANCE)
	VFB	DRAIN POWER SUPPLY VOLTAGE
	VREF	VIDEO FEED BACK VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS
	XVSYNCO	STROBE
		X VERTICAL SYNC OUTPUT

13. VOLTAGE CHART

Note:

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis

taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

- Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

13.1. MAIN P.C.B.

13.2. INVERTER P.C.B.

14. BLOCK DIAGRAM

NOTE
Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

14.1. OVERALL BLOCK DIAGRAM

14.2. POWER SUPPLY BLOCK DIAGRAM

14.3. SERVO BLOCK DIAGRAM

14.4. AUDIO BLOCK DIAGRAM

14.5. VIDEO BLOCK DIAGRAM

15. INTERCONNECTION SCHEMATIC DIAGRAM & SCHEMATIC DIAGRAM NOTES

15.1. INTERCONNECTION SCHEMATIC DIAGRAM

15.2. SCHEMATIC DIAGRAM NOTES

This schematic diagram may be modified at any time with the development of new technology.

Important safety notice:
Components identified by mark have special characteristics important for safety. Furthermore, special parts which have purpose of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in theparts list.

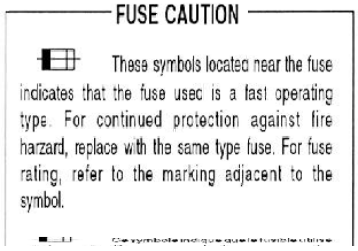
Important safety notice:
There are special components used in this equipment which are important for safety.

These parts are marked by ⚠ in the schematic diagrams. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
Cover the parts boxes made of plastics with aluminum foil.
Ground the soldering iron.
Put a conductive mat on the work table.
Do not touch the legs of IC or LSI with the fingers directly.

CAUTION : FOR CONTINUED PROTECTION
AGAINST FIRE HAZARD, REPLACE ONLY WITH
SAME TYPE F1, F3, F4 8A 125V FUSE,
F5 1.6A 125V FUSE.
F6 4A 125V FUSE.
RISK OF FIRE-REPLACE FUSE AS MARKED.


FUSE CAUTION
These symbols located near the fuse indicates that the fuse usec is a fast operating type. For continued protection against fire harzard, replace with the same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

16. SCHEMATIC DIAGRAM

16.1. CHARGE BATTERY SECTION (MAIN P.C.B. (1/10)) SCHEMATIC DIAGRAM

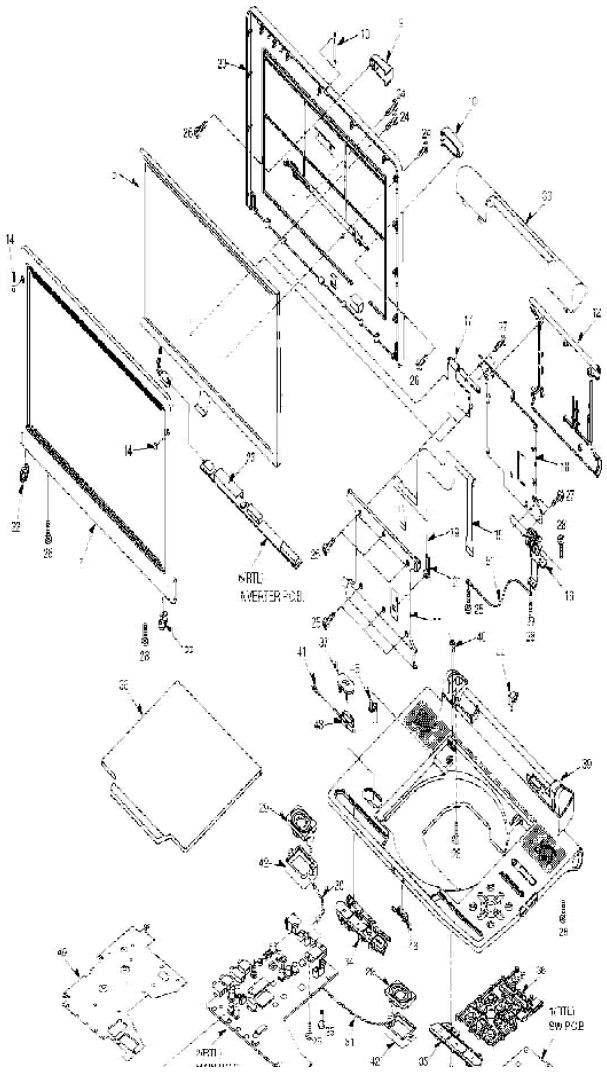
16.2. POWER SUPPLY SECTION (MAIN P.C.B. (2/10)) SCHEMATIC DIAGRAM

16.3. SERVO SECTION (MAIN P.C.B. (3/10)) SCHEMATIC DIAGRAM

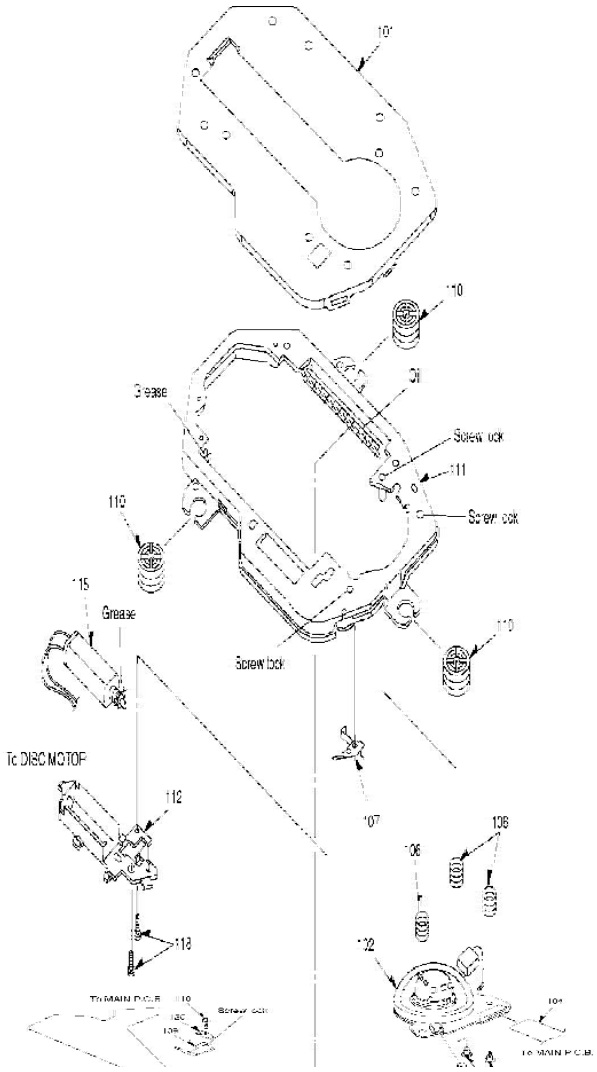
16.4. OPTICAL PICK UP SECTION (MAIN P.C.B. (4/10)) SCHEMATIC DIAGRAM

16.5. DV3 SECTION (MAIN P.C.B. (5/10)) SCHEMATIC DIAGRAM

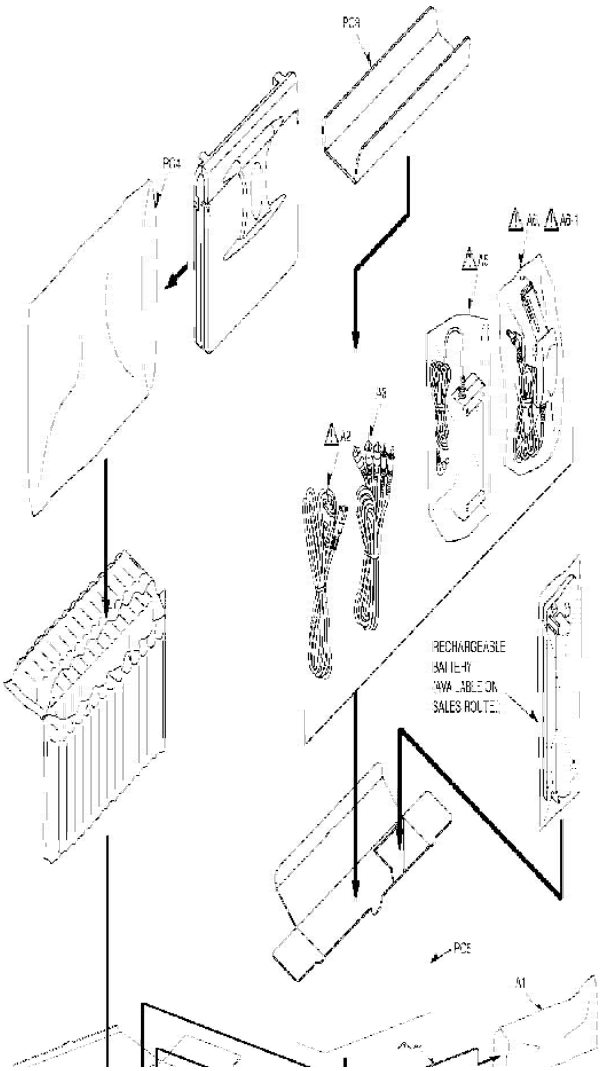
16.6. VIDEO OUT SECTION (MAIN P.C.B. (6/10)) SCHEMATIC DIAGRAM
16.7. AUDIO OUT SECTION (MAIN P.C.B. (7/10)) SCHEMATIC DIAGRAM
16.8. OPERATION SECTION (MAIN P.C.B. (8/10)) SCHEMATIC DIAGRAM
16.9. LCD IF SECTION (MAIN P.C.B. (9/10)) SCHEMATIC DIAGRAM
16.10. XBS SECTION (MAIN P.C.B. (10/10)) SCHEMATIC DIAGRAM
16.11. OPERATION SECTION (OPERATION P.C.B.) SCHEMATIC DIAGRAM
16.12. INVERTER SECTION SCHEMATIC DIAGARAM
17. CIRCUIT BOARD ASSEMBLY
17.1. MAIN P.C.B. (1/2) (COMPONENT SIDE)
17.2. MAIN P.C.B. (2/2) (FOIL SIDE)
17.3. OPERATION & INVERTER P.C.B.
18. EXPLODED VIEWS
18.1. Casing Parts & Mechanism Section Exploded View



18.2. Mechanism Section Exploded View



18.3. Packing & Accessories Exploded View



19. REPLACEMENT PARTS LIST

Notes:

***Important safety notice:**

Components identified by mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.
***Warning: This product uses a laser diode. Refer to caution statements.**
***Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF), F=Farads (F).**
***Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).**
***The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.**
***"<IA>" mark in Remarks indicate languages of instruction manual. [<IA>: English/Canadian French]**
***Parts indicated with (SPG) in the Remarks column are supplied by PAVC (SPG).**
All other parts are supplied by PAVCSG (ASPC).

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	REP3999A-C	SW P.C.B.	1	(RTL)
2	REP4000F-C	MAIN P.C.B.	1	(RTL)
4	REZ1698-1	FFC(6P)	1	
5	L5EDD2H00005	LCD PANEL	1	
6	REP3894A-S	INVERTER P.C.B.	1	
7	RGP1319-1K	MONITOR CABINET ASS'Y	1	
9	RGQ0425-1S	SHAFT HOLDER(L)	1	
10	RGQ0426-1S	SHAFT HOLDER(R)	1	
11	RGQ0427-1S	MONO ARM	1	
12	RGQ0428-1S	MONO ARM COVER	1	
13	RGQ0429-1H	MONITOR CUSHION	1	
14	RGQ0431-K	CUSHION	2	
15	RJB3046A-1	MONO ARM FPC	1	
16	RKC0023-1	FRICTION HINGE(A)	1	
17	RKC0024	FRICTION HINGE(B)	1	
18	RMA1928	HINGE PLATE	1	
19	RMB0835	LOCK LEVER SPRING	1	
20	RFKKPDLS91AS	MONITOR COVER ASS'Y	1	
21	RML0700-1	LOCK LEVER	1	
22	RMR1705-H	ROLLER	2	
23	RMZ0780	INSULATION SHEET	1	
24	XQN17+B4FN	SCREW	3	
25	XQN17+BG4FNJ	SCREW	17	
26	XQN17+BG6FN	SCREW	15	
27	XQN2+B3FN	SCREW	4	
28	XTN17+6GFJK	SCREW	6	
29	EAS2D01T	SPEAKER	2	
30	REZ1786	SPEAKER(L) WIRE	1	
31	REZ1787	SPEAKER(R) WIRE	1	
33	RGQ0430-1S	HINGE COVER	1	
34	RGU2455-K	MAIN BUTTON(L)	1	
35	RGU2456-K	MAIN BUTTON(R)	1	
36	RGU2457-S	OPERATION BUTTON	1	
37	RGU2458-S	OPEN BUTTON	1	
38	RKF0732-1S1	DISC COVER ASS'Y	1	
39	RKM0553-S	MAIN CABINET	1	
40	RMB0833	OPEN SPRING	1	
41	RMB0834	OPEN BUTTON SPRING	1	
42	RMG0569-K1	SPEAKER RUBBER	2	
43	RML0699	LOCK LEVER	1	
44	RMR1703-H	STOPPER	1	
45	RMR1704-H	LCD OFF BUTTON	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
46	RGL0685-W	LIGHTING PIECE	1	
47	RKS0424-S	BOTTOM CABINET	1	
48	RKW0803-W	REMOTE SENSOR WINDOW	1	
49	RMY0354	HEAT SINK	1	
50	RMX0324	REMOTE SENSOR SPACER	1	
51	REZ1697	WIRE	1	
101	RMK0503-C	COVER	1	
102	BKL2E08KA	DISC MOTOR	1	
103	RDG0514-C	INTERFACE GEAR	1	
104	REZ1740	SPINDLE FFC	1	
105	RHD17037-1	SCREW	3	
106	RMB0681-J	TILT SPRING	3	
107	RMC0448-C	SPRING	1	
108	RMC0592-C	SPRING	1	
109	RMC0455-3C	SPRING	1	
110	RMG0562-K	DAMPER	3	
111	RMK0502-5C	TRAVERSE BASE	1	
112	RMR1393-WC	MOTOR COVER	1	
113	RMS0751-J	INTERFACE GEAR SHAFT	1	
114	RXJ0031	DRIVE SHAFT ASS'Y	1	
115	RXQ0786-1	TRAVERSE MOTOR ASS'Y	1	
116	RAF3134A-2	OPTICAL PICK-UP	1	
118	XQN17+BG4FN	SCREW	2	
119	RHD17043-1	SCREW	1	
120	RMC0593-C	SUPPORT PLATE	1	
A1	RPF0046-1	POLYETHYLENE BAG(F.B.)	1	
A2	K2CB2CB00018	AC CORD	1	
A3	K2KA6CB00003	AV CORD	1	
A4	RQT8245-Y	OPERATING INSTRUCTIONS	1	(IA)
A5	RFEA213W-5W	AC ADAPTOR	1	
A6	RFEC202M-M	CAR DC CABLE	1	
A6-1	K5D252APA008	FUSE	1	
PC1	RPK2427	G-BOX	1	
PC3	RPQ1955	PAD	1	
PC4	RPFC0031-B	POLYETHYLENE BAG(UNIT)	1	
PC5	RPQF0277	ACCESSORY BOX	1	
C1001	ECJ1VB1C105K	16V 1U	1	
C1002	ECJ1VB1C105K	16V 1U	1	
C1003	ECJ0EB1E102K	25V 1000P	1	
C1004	ECJ0EB1E102K	25V 1000P	1	
C1005	ECJ1VB1C105K	16V 1U	1	
C1006	ECJ0EB1E102K	25V 1000P	1	
C1007	ECJ0EC1H101J	50V 100P	1	
C1015	ECJ1VB0J474K	6.3V 0.47U	1	
C1016	ECJ1VB1C105K	16V 1U	1	
C1017	F3F1A106A047	10V 10U	1	
C1018	ECJ0EC1H151J	50V 150P	1	
C1019	F3F1A106A047	10V 10U	1	
C1021	ECJ0EC1H151J	50V 150P	1	
C1022	ECJ0EB1E271K	25V 270P	1	
C1023	ECJ1VB0J474K	6.3V 0.47U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1025	ECJ0EB1C682K	16V 6800P	1	
C1026	ECJ0EB1E182K	25V 1800P	1	
C1027	ECJ0EB1E332K	25V 3300P	1	
C1031	ECJ1VB1C105K	16V 1U	1	
C1038	ECJ1VB1C105K	16V 1U	1	
C1044	ECJ1VB1C105K	16V 1U	1	
C1047	F3G1A476A037	10V 47U	1	
C1051	F3G1A476A037	10V 47U	1	
C1052	F3G1A476A037	10V 47U	1	
C1053	F3G1A476A037	10V 47U	1	
C1063	F1K1C106A062	16V 10U	1	
C1066	ECJ0EB1C103K	16V 0.01U	1	
C1067	ECJ0EF1C104Z	16V 0.1U	1	
C1068	ECJ0EF1C104Z	16V 0.1U	1	
C1069	ECJ1VB1C105K	16V 1U	1	
C1070	ECJ0EB1E102K	25V 1000P	1	
C1071	ECJ0EC1H101J	50V 100P	1	
C1072	ECJ0EB1E182K	25V 1800P	1	
C1073	F1H1A224A025	10V 0.224U	1	ECUV1A224KBV
C1074	ECJ1VB1C105K	16V 1U	1	
C1101	F1K1A1060017	10V 10U	1	
C1102	ECJ3YB1E105K	25V 1U	1	
C1103	ECJ1VB1C105K	16V 1U	1	
C1104	F3G1A476A037	10V 47U	1	
C1106	F2H1E680A003	25V 68U	1	
C1109	F1J0J1060010	6.3V 10U	1	
C1205	ECJ1VB1A105K	10V 1U	1	
C1401	ECJ0EB1C103K	16V 0.01U	1	
C1402	ECJ0EC1H101J	50V 100P	1	
C1403	ECJ3YB1E105K	25V 1U	1	
C1404	F2H1E680A003	25V 68U	1	
C1405	ECJ0EF1C104Z	16V 0.1U	1	
C1406	ECJ0EC1H101J	50V 100P	1	
C1407	F2G1C101A038	16V 100U	1	
C1409	F3F0J226A057	6.3V 22U	1	
C1410	ECJ0EC1H101J	50V 100P	1	
C1411	ECJ3YB1E105K	25V 1U	1	
C1412	F3F1C106A042	16V 10U	1	
C1413	ECJ3YB1E475K	25V 4.7U	1	
C1414	ECJ0EB1E103K	25V 0.01U	1	
C1415	ECJ1VB1A105K	10V 1U	1	
C1417	ECJ0EB1A104K	10V 0.1U	1	
C1421	ECJ0EF1C104Z	16V 0.1U	1	
C1422	ECJ0EF1C104Z	16V 0.1U	1	
C1601	ECJ0EC1H101J	50V 100P	1	
C1606	F1K1C106A062	16V 10U	1	
C1623	F1J0J1060010	6.3V 10U	1	
C1624	F1J1A335A005	10V 3.3U	1	
C1625	ECJ0EF1C104Z	16V 0.1U	1	
C1651	F1J1A335A005	10V 3.3U	1	
C1652	F2G1C101A038	16V 100U	1	
C1902	ECJ1VB1C683K	16V 0.068U	1	
C1903	F1L3F2200004	3KV 22U	1	
C1904	ECJ1VB1H103K	50V 0.01U	1	
C1905	ECJ1VB1C683K	16V 0.068U	1	
C1906	F1H1H101A799	50V 100P	1	
C1907	ECJ1VB0J684K	6.3V 0.68U	1	

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1908	F1H1H222A798	50V 2200P	1	ECUV1H222KBV
C1909	F1H1H332A798	50V 3300P	1	ECUV1H332KBV
C1910	ECJ1VB1C105K	16V 1U	1	
C1911	F1H1H222A798	50V 2200P	1	ECUV1H222KBV
C1912	F1H1C104A065	16V 0.1U	1	ECUV1C104KBV
C1913	F1H1C104A065	16V 0.1U	1	ECUV1C104KBV
C1914	F1H1H222A798	50V 2200P	1	ECUV1H222KBV
C1915	F1J1C4750003	16V 4.7U	1	
C1917	F1J1C4750003	16V 4.7U	1	
C2501	ECJ0EC1H101J	50V 100P	1	
C2602	ECJ0EF1C104Z	16V 0.1U	1	
C2604	ECJ0EF1C104Z	16V 0.1U	1	
C2605	F3G1A476A037	10V 47U	1	
C2606	ECJ0EF1C104Z	16V 0.1U	1	
C2607	ECJ0EF1C104Z	16V 0.1U	1	
C2651	F3G1A476A037	10V 47U	1	
C2652	F3F0J4760004	6.3V 47U	1	
C2653	ECJ0EF1C104Z	16V 0.1U	1	
C2654	ECJ0EF1C104Z	16V 0.1U	1	
C2655	ECJ0EF1C104Z	16V 0.1U	1	
C2656	ECJ0EF1C104Z	16V 0.1U	1	
C2657	ECJ0EB1A104K	10V 0.1U	1	
C2658	ECJ0EB1C103K	16V 0.01U	1	
C2659	ECJ0EB1C103K	16V 0.01U	1	
C2660	ECJ0EB1C103K	16V 0.01U	1	
C2661	ECJ0EF1C104Z	16V 0.1U	1	
C2662	ECJ0EB1C103K	16V 0.01U	1	
C2663	ECJ0EB1C103K	16V 0.01U	1	
C2664	ECJ0EB1C103K	16V 0.01U	1	
C3001	ECJ0EF1C104Z	16V 0.1U	1	
C3002	ECJ0EF1C104Z	16V 0.1U	1	
C3004	ECJ0EF1C104Z	16V 0.1U	1	
C3006	ECJ0EF1C104Z	16V 0.1U	1	
C3007	ECJ0EF1C104Z	16V 0.1U	1	
C3008	ECJ0EF1C104Z	16V 0.1U	1	
C3009	ECJ0EF1C104Z	16V 0.1U	1	
C3010	ECJ0EF1C104Z	16V 0.1U	1	
C3011	ECJ0EF1C104Z	16V 0.1U	1	
C3012	ECJ0EF1C104Z	16V 0.1U	1	
C3015	ECJ0EF1C104Z	16V 0.1U	1	
C3016	ECJ0EF1C104Z	16V 0.1U	1	
C3018	ECJ1VB0J105K	6.3V 1U	1	
C3019	ECJ0EF1C104Z	16V 0.1U	1	
C3020	ECJ0EF1C104Z	16V 0.1U	1	
C3021	ECJ0EF1C104Z	16V 0.1U	1	
C3022	ECJ0EB1C153K	16V 0.015U	1	
C3024	ECJ0EF1C104Z	16V 0.1U	1	
C3025	ECJ0EF1C104Z	16V 0.1U	1	
C3026	ECJ0EF1C104Z	16V 0.1U	1	
C3027	ECJ0EF1C104Z	16V 0.1U	1	
C3028	ECJ0EB1A333K	10V 0.033U	1	
C3029	ECJ0EC1H221J	50V 220P	1	
C3030	ECJ0EF1C104Z	16V 0.1U	1	
C3031	ECJ0EF1C104Z	16V 0.1U	1	
C3032	ECJ0EF1C104Z	16V 0.1U	1	
C3033	ECJ0EB1C562K	16V 5600P	1	
C3034	ECJ0EB1E222K	25V 8200P	1	

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3035	ECJ0EB1C183K	16V 0.018U	1	
C3036	ECJ0EF1C104Z	16V 0.1U	1	
C3037	ECJ1VB0J105K	6.3V 1U	1	
C3038	ECJ0EF1C104Z	16V 0.1U	1	
C3039	ECJ1VB0J105K	6.3V 1U	1	
C3040	ECJ0EB1A104K	10V 0.1U	1	
C3041	ECJ0EB1A104K	10V 0.1U	1	
C3042	ECJ0EF1C104Z	16V 0.1U	1	
C3043	ECJ0EB1A104K	10V 0.1U	1	
C3044	ECJ0EB1A104K	10V 0.1U	1	
C3045	ECJ0EF1C104Z	16V 0.1U	1	
C3046	ECJ1VB0J105K	6.3V 1U	1	
C3047	ECJ0EB1A104K	10V 0.1U	1	
C3048	ECJ0EB1A104K	10V 0.1U	1	
C3049	ECJ0EB1A104K	10V 0.1U	1	
C3050	ECJ0EF1C104Z	16V 0.1U	1	
C3051	ECJ0EB1A104K	10V 0.1U	1	
C3052	ECJ1VB0J105K	6.3V 1U	1	
C3053	ECJ1VB0J105K	6.3V 1U	1	
C3054	ECJ1VB0J105K	6.3V 1U	1	
C3055	ECJ1VB0J105K	6.3V 1U	1	
C3056	ECJ1VB0J105K	6.3V 1U	1	
C3057	ECJ0EB1A104K	10V 0.1U	1	
C3058	ECJ0EF1C104Z	16V 0.1U	1	
C3059	ECJ0EF1C104Z	16V 0.1U	1	
C3060	ECJ1VB0J105K	6.3V 1U	1	
C3061	F3F0J476A047	6.3V 47U	1	
C3062	ECJ1VB0J105K	6.3V 1U	1	
C3063	F3F0J476A047	6.3V 47U	1	
C3064	F3F0J476A047	6.3V 47U	1	
C3065	ECJ0EB1A104K	10V 0.1U	1	
C3066	F3F0J476A047	6.3V 47U	1	
C3067	ECJ1VB0J105K	6.3V 1U	1	
C3069	ECJ1VB0J105K	6.3V 1U	1	
C3070	ECJ1VB0J105K	6.3V 1U	1	
C3071	ECJ0EC1H120J	50V 12P	1	
C3072	ECJ0EC1H270J	50V 27P	1	
C3073	F3F0J476A047	6.3V 47U	1	
C3074	F3F0J476A047	6.3V 47U	1	
C3075	ECJ0EB1E102K	25V 1000P	1	
C3076	ECJ0EB1E102K	25V 1000P	1	
C3077	ECJ0EB1E821K	25V 820P	1	
C3078	ECJ0EB1E102K	25V 1000P	1	
C3079	ERJ2GE0R00X	1/16W 0	1	
C3080	ERJ2GE0R00X	1/16W 0	1	
C3081	ERJ2GE0R00X	1/16W 0	1	
C3082	ECJ0EB1E102K	25V 1000P	1	
C3090	ERJ2GE0R00X	1/16W 0	1	
C3091	ECJ0EB1E102K	25V 1000P	1	
C3092	ECJ0EB1E102K	25V 1000P	1	
C3093	ECJ0EB1E102K	25V 1000P	1	
C3094	ECJ0EB1E102K	25V 1000P	1	
C3095	ERJ2GE0R00X	1/16W 0	1	
C3201	ECJ0EB1C103K	16V 0.01U	1	
C3202	ECJ1VB0J105K	6.3V 1U	1	
C3203	F3F0J4760004	6.3V 47U	1	
C3204	ECJ0EF1C104Z	16V 0.1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3205	ECJ0EF1C104Z	16V 0.1U	1	
C3206	ECJ0EF1C104Z	16V 0.1U	1	
C3207	F3F0J226A057	6.3V 22U	1	
C3208	ECJ1VB0J105K	6.3V 1U	1	
C3209	ECJ0EC1H220J	50V 22P	1	
C3210	ECJ0EC1H220J	50V 22P	1	
C3212	F2G0G331A012	4V 330U	1	
C3213	F3F0J226A057	6.3V 22U	1	
C3214	F2H0G221A001	25V 220U	1	
C3216	ECJ1VB0J105K	6.3V 1U	1	
C3217	ECJ0EF1C104Z	16V 0.1U	1	
C3218	ECJ1VB0J105K	6.3V 1U	1	
C3219	ECJ1VB0J105K	6.3V 1U	1	
C3220	ECJ1VB0J105K	6.3V 1U	1	
C3221	ECJ0EB1A104K	10V 0.1U	1	
C3223	ECJ0EC1H101J	50V 100P	1	
C3224	ECJ0EF1C104Z	16V 0.1U	1	
C3225	ECJ0EC1H101J	50V 100P	1	
C3226	ECJ1VB0J105K	6.3V 1U	1	
C3227	ECJ1VB0J105K	6.3V 1U	1	
C3228	ECJ0EC1H470J	50V 47P	1	
C3229	ECJ0EC1H470J	50V 47P	1	
C3230	ECJ0EC1H470J	50V 47P	1	
C3231	ECJ0EC1H470J	50V 47P	1	
C3232	ECJ0EC1H470J	50V 47P	1	
C3233	ECJ0EC1H470J	50V 47P	1	
C3234	ECJ0EC1H470J	50V 47P	1	
C3235	ECJ0EC1H470J	50V 47P	1	
C3236	ECJ0EC1H470J	50V 47P	1	
C3237	ECJ0EC1H470J	50V 47P	1	
C3238	ECJ0EC1H470J	50V 47P	1	
C3239	ECJ0EC1H470J	50V 47P	1	
C3240	ECJ0EC1H470J	50V 47P	1	
C3241	ECJ0EC1H470J	50V 47P	1	
C3242	ECJ0EC1H470J	50V 47P	1	
C3243	ECJ0EC1H470J	50V 47P	1	
C3244	ECJ0EF1C104Z	16V 0.1U	1	
C4001	F1J0J1060010	6.3V 10U	1	
C4002	F1J0J1060010	6.3V 10U	1	
C4003	ECJ0EC1H390J	50V 39U	1	
C4004	ECJ0EC1H390J	50V 39U	1	
C4005	F1J0J1060010	6.3V 10U	1	
C4006	F1J0J1060010	6.3V 10U	1	
C4007	ECJ0EB1E102K	25V 1000P	1	
C4008	ECJ0EB1E102K	25V 1000P	1	
C4015	ECJ1VB0J105K	6.3V 1U	1	
C4016	ECJ1VB0J105K	6.3V 1U	1	
C4017	ECJ0EB1A104K	10V 0.1U	1	
C4018	ECJ0EB1A104K	10V 0.1U	1	
C4019	F3F1A106A047	10V 10U	1	
C4020	F3F1A106A047	10V 10U	1	
C4022	ECJ0EF1C104Z	16V 0.1U	1	
C4023	F3F1A226A047	10V 22U	1	
C4024	F1J0J1060010	6.3V 10U	1	
C4026	F3F0J476A047	6.3V 47U	1	
C4027	F3F0J476A047	6.3V 47U	1	
C4028	F2G1C101A038	16V 100U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4029	ECJ0EF1C104Z	16V 0.1U	1	
C4030	F3F1A226A047	10V 22U	1	
C4031	ECJ0EF1C104Z	16V 0.1U	1	
C4032	F3F0J4760004	6.3V 47U	1	
C4033	ECJ0EF1C104Z	16V 0.1U	1	
C4034	F1K1C106A062	16V 10U	1	
C4035	F3F0J476A047	6.3V 47U	1	
C4036	F1J0J1060010	6.3V 10U	1	
C4038	ECJ1VB0J105K	6.3V 1U	1	
C4039	ECJ1VB0J105K	6.3V 1U	1	
C4040	F3F0J476A047	6.3V 47U	1	
C4041	ECJ0EF1C104Z	16V 0.1U	1	
C4042	ECJ0EF1C104Z	16V 0.1U	1	
C4044	F3F1A106A047	10V 10U	1	
C4045	ECJ0EF1C104Z	16V 0.1U	1	
C4046	ECJ1VB0J105K	6.3V 1U	1	
C4047	ECJ0EF1C104Z	16V 0.1U	1	
C4048	ECJ0EF1C104Z	16V 0.1U	1	
C4051	ECJ1VB0J105K	6.3V 1U	1	
C4052	ECJ1VB0J105K	6.3V 1U	1	
C4060	ERJ2GE0R00X	1/16W 0	1	
C4061	ERJ2GE0R00X	1/16W 0	1	
C4062	ERJ2GE0R00X	1/16W 0	1	
C4063	ERJ2GE0R00X	1/16W 0	1	
C4064	ECJ0EB1E102K	25V 1000P	1	
C4065	ECJ0EB1E102K	25V 1000P	1	
C4066	ECJ0EB1E102K	25V 1000P	1	
C4067	ECJ0EB1E102K	25V 1000P	1	
C4725	ECJ0EB1C103K	16V 0.01U	1	
C4726	ECJ0EB1C103K	16V 0.01U	1	
C4727	ECJ0EB1C103K	16V 0.01U	1	
C4728	ECJ0EB1C103K	16V 0.01U	1	
C4732	ECJ0EB1A104K	10V 0.1U	1	
C4737	F2G0G331A012	4V 330U	1	
C4738	F2G0G331A012	4V 330U	1	
C4743	ECJ0EC1H101J	50V 100P	1	
C4744	ECJ0EC1H101J	50V 100P	1	
C5201	ECJ0EB1E102K	25V 1000P	1	
C5202	ECJ0EF1C104Z	16V 0.1U	1	
C5203	ECJ0EF1C104Z	16V 0.1U	1	
C5204	F1J0J1060010	6.3V 10U	1	
C5205	F1J0J1060010	6.3V 10U	1	
C5206	ECJ0EF1C104Z	16V 0.1U	1	
C5209	F1J0J1060010	6.3V 10U	1	
C5210	F1J0J1060010	6.3V 10U	1	
C5211	F3F0J476A047	6.3V 47U	1	
C5215	F3F0J476A047	6.3V 47U	1	
C5217	ECJ0EC1H101J	50V 100P	1	
C5218	ECJ0EF1C104Z	16V 0.1U	1	
C5219	ECJ0EB1E102K	25V 1000P	1	
C5220	ECJ0EB1E102K	25V 1000P	1	
C5222	ECJ0EC1H470J	50V 47P	1	
C5224	ECJ0EC1H470J	50V 47P	1	
C5225	ECJ0EC1H470J	50V 47P	1	
C5232	ECJ0EF1C104Z	16V 0.1U	1	
C6001	ECJ0EB1C103K	16V 0.01U	1	
C6002	ECJ0EB1A104K	10V 0.1U	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C6003	ECJ0EB1A104K	10V 0.1U	1	
C6004	ECJ1VB0J105K	6.3V 1U	1	
C6005	ECJ0EB1A104K	10V 0.1U	1	
C6006	ECJ0EB1A104K	10V 0.1U	1	
C6007	ECJ0EF1C104Z	16V 0.1U	1	
C6008	ECJ0EF1C104Z	16V 0.1U	1	
C6009	ECJ0EB1A104K	10V 0.1U	1	
C6010	ECJ0EF1C104Z	16V 0.1U	1	
C6011	ECJ1VB0J105K	6.3V 1U	1	
C6012	ECJ0EF1C104Z	16V 0.1U	1	
C6801	F3F0J476A047	6.3V 47U	1	
C6802	ECJ0EF1C104Z	16V 0.1U	1	
C8001	ECJ0EC1H180J	50V 18P	1	
C8002	ECJ0EC1H180J	50V 18P	1	
C8006	ECJ0EB1E102K	25V 1000P	1	
C8008	F1H1H390A799	50V 39P	1	ECUV1H390JCV
C8010	ECJ1VB0J105K	6.3V 1U	1	
C8011	ECJ1VB0J105K	6.3V 1U	1	
C8012	F3F1A226A047	10V 22U	1	
C8013	ECJ1VB0J105K	6.3V 1U	1	
C8016	ECJ1VB0J105K	6.3V 1U	1	
C8017	ECJ0EF1C104Z	16V 0.1U	1	
C8020	F1J1A225A003	10V 2.2U	1	
C8021	F1J1A225A003	10V 2.2U	1	
C8022	F1J1A225A003	10V 2.2U	1	
C8023	ECJ0EB1C103K	16V 0.01U	1	
C8024	ECJ0EB1C822K	16V 8200P	1	
C8025	F3F1A226A047	10V 22U	1	
C8026	ECJ0EB1E331K	25V 330P	1	
C8027	ECJ0EB1E331K	25V 330P	1	
C8028	ECJ0EB1E331K	25V 330P	1	
C8029	F3F1A106A047	10V 10U	1	
C8030	F1J1A335A005	10V 3.3U	1	
C8031	ECJ0EB1E561K	25V 560P	1	
C8032	F1J0J4750002	6.3V 4.7U	1	
C8041	ECJ0EC1H820J	50V 82P	1	
C8042	ECJ0EC1H680J	50V 68P	1	
C8045	ECJ1VB0J105K	6.3V 1U	1	
C8046	ECJ0EB1A104K	10V 0.1U	1	
C8050	ECJ0EB1A104K	10V 0.1U	1	
C8201	ECJ1VB0J105K	6.3V 1U	1	
C8204	ECJ0EC1H470J	50V 47P	1	
C8205	ECJ0EC1H470J	50V 47P	1	
C8207	ECJ0EC1H470J	50V 47P	1	
C8208	ECJ0EC1H470J	50V 47P	1	
C8212	ECJ0EB1E102K	25V 1000P	1	
C8213	ECJ0EB1C103K	16V 0.01U	1	
C8214	ECJ0EB1E102K	25V 1000P	1	
C8215	ECJ0EB1E102K	25V 1000P	1	
C8216	ECJ0EB1E102K	25V 1000P	1	
C8217	ECJ3YB1E105K	25V 1U	1	
C8218	F3F1A106A047	10V 10U	1	
C8219	ECJ0EB1E102K	25V 1000P	1	
C8220	F3F1A106A047	10V 10U	1	
C8221	ECJ0EF1C104Z	16V 0.1U	1	
C8223	ECJ0EB1C223K	16V 0.022U	1	
C8224	ECJ0EF1C104Z	16V 0.1U	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C8225	ECJ0EF1C104Z	16V 0.1U	1	
C8237	ECJ0EB1E102K	25V 1000P	1	
C8250	ECJ0EB1E821K	25V 820P	1	
C8251	ECJ0EC1H221J	50V 220P	1	
C8252	ECJ0EC1H221J	50V 220P	1	
C8255	ECJ0EB1E102K	25V 1000P	1	
C8256	ECJ0EF1C104Z	16V 0.1U	1	
C8401	ECJ0EF1C104Z	16V 0.1U	1	
C8402	ECJ1VB0J105K	6.3V 1U	1	
C8403	ECJ0EB1C103K	16V 0.01U	1	
C8404	F3F1C106A042	16V 10U	1	
C8407	F1J0J4750002	6.3V 4.7U	1	
C8409	ECJ0EB1E102K	25V 1000P	1	
C8410	ECJ0EB1E102K	25V 1000P	1	
C8602	ECJ0EB1E122K	25V 1200P	1	
C8801	ECJ0EF1C104Z	16V 0.1U	1	
C8802	ECJ1VB0J105K	6.3V 1U	1	
C8803	F3F1A226A047	10V 22U	1	
C8804	ECJ0EB1E102K	25V 1000P	1	
C8805	ECJ1VB0J105K	6.3V 1U	1	
C8806	F3F0J476A047	6.3V 47U	1	
C8807	ECJ0EB1C103K	16V 0.01U	1	
C8808	F3F1A226A047	10V 22U	1	
C8809	ECJ2YB1C105K	16V 1U	1	
C8810	ECJ2YB1C105K	16V 1U	1	
C8811	ECJ2YB1C105K	16V 1U	1	
C8812	ECJ0EF1C104Z	16V 0.1U	1	
C8813	F3F1A226A047	10V 22U	1	
C8841	ERJ2GE0R00X	1/16W 0	1	
C8843	ECJ1VB0J105K	6.3V 1U	1	
C8845	ECJ1VB0J105K	6.3V 1U	1	
C8846	ECJ0EB1A104K	10V 0.1U	1	
C8847	ECJ0EB1A104K	10V 0.1U	1	
C8848	ECJ0EB1A104K	10V 0.1U	1	
C8860	ECJ0EB1E102K	25V 1000P	1	
C8861	ECJ0EB1E102K	25V 1000P	1	
C8862	ERJ2GE0R00X	1/16W 0	1	
C8863	ERJ2GE0R00X	1/16W 0	1	
D1011	B0JCPD000032	DIODE	1	
D1013	B0JCPD000032	DIODE	1	
D1016	MAZ81000ML	DIODE	1	
D1017	MAZ80390LL	DIODE	1	
D1021	B0JCPD000032	DIODE	1	
D1101	B0JCMD000022	DIODE	1	
D1102	MA2J11100L	DIODE	1	MA111-TX
D1103	MA2J11100L	DIODE	1	MA111-TX
D1401	B0JCPE000004	DIODE	1	
D1402	B0JCPD000032	DIODE	1	
D1404	B0JCPD000032	DIODE	1	
D1405	B0JCPD000032	DIODE	1	
D1406	B0JCMD000022	DIODE	1	
D1411	MA2J11100L	DIODE	1	MA111-TX
D1412	MAZ80510ML	DIODE	1	
D1413	MA3J142E0L	DIODE	1	
D1414	MA3J142E0L	DIODE	1	
D1415	MAZ80510ML	DIODE	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D1416	MA2J11100L	DIODE	1	MA111-TX
D1417	MA2J11100L	DIODE	1	MA111-TX
D1601	B0JCPD000032	DIODE	1	
D1621	B0JCPE000004	DIODE	1	
D1901	MA3S13300L	DIODE	1	
D1902	MA3S13300L	DIODE	1	
D1903	MA3S132D0L	DIODE	1	
D3001	MA2J11100L	DIODE	1	MA111-TX
D4001	MA3S132D0L	DIODE	1	
D4002	MA2SD2400L	DIODE	1	
D4003	MA3S132E0L	DIODE	1	
D4004	MA3S132D0L	DIODE	1	
D4006	MA3S132E0L	DIODE	1	
D4007	MA3S132D0L	DIODE	1	
D4008	MA2J11100L	DIODE	1	MA111-TX
D4010	MA2J11100L	DIODE	1	MA111-TX
D5221	MA2J11100L	DIODE	1	MA111-TX
D6002	LNJ414K82RA1	DIODE	1	
D6003	LNJ826W83RA	DIODE	1	
D6004	MA2J11100L	DIODE	1	MA111-TX
D8201	MA2SD2400L	DIODE	1	
D8202	MA2SD2400L	DIODE	1	
D8401	MA2J11100L	DIODE	1	MA111-TX
FL8201	J0HAAB000037	FILTER	1	
FL8202	J0HAAB000037	FILTER	1	
FL8203	J0HAAB000037	FILTER	1	
FP1901	K1MN40BA0059	CONNECTOR(40P)	1	
FP1903	K1MN30BA0059	CONNECTOR(30P)	1	
FP2501	K1MN18BA0113	CONNECTOR(18P)	1	
FP5201	K1MN30BA0079	CONNECTOR(30P)	1	
FP6202	K1MY06BA0041	CONNECTOR(6P)	1	
FP6801	K1MN06AA0003	CONNECTOR(6P)	1	
FP8005	K1MN40BA0059	CONNECTOR(40P)	1	
IC1001	C1ZBZ0002345	IC	1	
IC1003	C0DBZHD00013	IC	1	
IC1004	C0CBCDC00050	IC	1	
IC1101	C0CBCDC00050	IC	1	
IC1401	C0DBCMD00005	IC	1	
IC1411	C0DBAGZ00029	IC	1	
IC1412	C0EBL0000178	IC	1	
IC1601	C0DBDZZ00008	IC	1	
IC1901	C0DBZKA00003	IC	1	
IC2601	C0GBG0000048	IC	1	
IC2651	C0GBF0000004	IC	1	
IC3001	RFKWPSA0W160	IC	1	(SPG)
IC3002	RFKWDBA002PA	IC	1	
IC3004	MN2DS0009VP	IC	1	
IC3007	C0EBE0000384	IC	1	
IC3009	C3ABPG000145	IC	1	
IC3201	C9ZB00000461	IC	1	
IC3202	C1AB00002450	IC	1	
IC3203	C0JBAR000367	IC	1	
IC3204	C1AB00001379	IC	1	
IC3205	C0JBAA000175	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC4001	C0CBCDC00050	IC	1	
IC4002	C0CBCDC00050	IC	1	
IC4003	C0FBBK000049	IC	1	
IC4004	C0JBAR000367	IC	1	
IC4005	C0ABBB000105	IC	1	
IC4006	C0ABBA000150	IC	1	
IC4008	C0ZBZ0001010	IC	1	
IC4009	C0ABBA000077	IC	1	
IC5201	C0JBAS000265	IC	1	
IC6001	C0EBB0000036	IC	1	
IC6002	MN101C62DAA	IC	1	
IC6003	C0JBAA000344	IC	1	
IC6007	C0EBE0000124	IC	1	
IC8001	AN12577A-VT	IC	1	
IC8202	C0JBAZ002192	IC	1	
IC8401	C3EBDC000063	IC	1	
IC8403	C0ABBB000271	IC	1	
IC8602	C0JBAA000140	IC	1	
IC8801	C0CBCDC00050	IC	1	
IC8802	C0CBABC00147	IC	1	
IP1401	K5H3121A0004	IC PROTECTOR	1	⚠
IP1402	K5H3121A0004	IC PROTECTOR	1	⚠
IP1421	K5H3121A0004	IC PROTECTOR	1	⚠
IP1901	K5H2021A0003	IC PROTECTOR	1	⚠
IR6801	B3RAD0000075	IC	1	
JK1401	K2ED2B000002	JACK,DC IN	1	
JK1421	K4ZZ04000033	BATTERY TERMINAL	1	
JK3201	K2HC104B0027	JACK	1	
JK4001	K2HC108B0002	JACK	1	
JK4702	K2HC104B0039	JACK	1	
JK4703	K2HC104B0039	JACK	1	
K1001	ERJ2GE0R00X	1/16W 0	1	
K1003	ERJ2GE0R00X	1/16W 0	1	
K1005	ERJ2GE0R00X	1/16W 0	1	
K1007	ERJ2GE0R00X	1/16W 0	1	
K1008	ERJ2GE0R00X	1/16W 0	1	
K1009	ERJ2GE0R00X	1/16W 0	1	
K1010	ERJ2GE0R00X	1/16W 0	1	
K1011	ERJ2GE0R00X	1/16W 0	1	
K1012	ERJ2GE0R00X	1/16W 0	1	
K1013	ERJ2GE0R00X	1/16W 0	1	
K1014	ERJ2GE0R00X	1/16W 0	1	
K1016	ERJ2GE0R00X	1/16W 0	1	
K1017	ERJ2GE0R00X	1/16W 0	1	
K1018	ERJ2GE0R00X	1/16W 0	1	
K1019	ERJ2GE0R00X	1/16W 0	1	
K1108	ERJ2GE0R00X	1/16W 0	1	
K1201	ERJ2GE0R00X	1/16W 0	1	
K1202	ERJ2GE0R00X	1/16W 0	1	
K3001	ERJ2GE0R00X	1/16W 0	1	
K3002	ERJ2GE0R00X	1/16W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
K3003	ERJ2GE0R00X	1/16W 0	1	
K3004	ERJ2GE0R00X	1/16W 0	1	
K5206	ERJ2GE0R00X	1/16W 0	1	
K5207	ERJ2GE0R00X	1/16W 0	1	
L1002	G1C150MA0182	COIL 15UH	1	
L1006	G1C150MA0218	COIL 15UH	1	
L1007	G1C150MA0182	COIL 15UH	1	
L1009	G1C150MA0182	COIL 15UH	1	
L1010	G1C150Z00004	COIL 15UH	1	
L1101	G1C100KA0055	COIL 10UH	1	
L1102	G1C100KA0055	COIL 10UH	1	
L1103	G1C100KA0055	COIL 10UH	1	
L1401	G0B200H00005	COIL	1	
L1402	G1C220M00043	COIL 22UH	1	
L1403	G1C101KA0023	COIL	1	
L1404	G1C220KA0055	COIL 22UH	1	
L1901	G1C150Z00004	COIL 15UH	1	
L3001	G1C100KA0055	COIL 10UH	1	
L3002	G1C100KA0055	COIL 10UH	1	
L3003	J0JCC0000101	COIL	1	
L3004	J0JCC0000101	COIL	1	
L3201	G1C220KA0055	COIL 22UH	1	
L3202	G1C330J00003	COIL	1	
L3203	G1C220KA0055	COIL 22UH	1	
L3204	G1C220KA0055	COIL 22UH	1	
L3205	G1C220KA0055	COIL 22UH	1	
L3206	G1C220KA0055	COIL 22UH	1	
L3207	G1C220KA0055	COIL 22UH	1	
L3208	G1C220KA0055	COIL 22UH	1	
L3209	G1C220KA0055	COIL 22UH	1	
L3210	G1C220KA0055	COIL 22UH	1	
L4001	G1C220KA0055	COIL 22UH	1	
L4701	J0JBC0000028	COIL	1	
L4702	J0JBC0000028	COIL	1	
L5201	G1C100KA0055	COIL 10UH	1	
L8001	G1C560JA0041	COIL	1	
L8030	G1C120JA0041	COIL 12UH	1	
L8801	G1C100K00020	COIL 10UH	1	
L8805	ERJ3GEY0R00V	1/10W 0	1	
L8806	G1C150M00009	COIL	1	
LB2651	J0JHC0000045	COIL	1	
LB3028	J0JHC0000045	COIL	1	
LB3029	J0JHC0000045	COIL	1	
LB3031	J0JBC0000028	COIL	1	
LB3032	J0JCC0000101	COIL	1	
LB3033	J0JHC0000045	COIL	1	
LB3201	J0JCC0000307	COIL	1	
LB4001	J0JCC0000101	COIL	1	
LB4002	J0JCC0000101	COIL	1	
LB4003	J0JBC0000028	COIL	1	
LB4004	J0JBC0000028	COIL	1	
LB4005	J0JCC0000101	COIL	1	
LB4701	J0JBC0000028	COIL	1	
LB4702	J0JBC0000028	COIL	1	
LB4703	J0JBC0000028	COIL	1	

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB4704	J0JBC0000028	COIL	1	
LB4706	J0JBC0000028	COIL	1	
LB4707	J0JBC0000028	COIL	1	
LB4708	J0JBC0000028	COIL	1	
LB4709	J0JBC0000028	COIL	1	
LB5206	ERJ3GEY0R00V	1/10W 0	1	
LB5207	J0JCC0000307	COIL	1	
LB5208	J0JCC0000307	COIL	1	
LB5209	J0JCC0000307	COIL	1	
LB5210	J0JCC0000307	COIL	1	
LB5211	J0JCC0000307	COIL	1	
LB5212	J0JCC0000307	COIL	1	
LB5213	J0JCC0000101	COIL	1	
LB5216	J0JCC0000307	COIL	1	
LB5218	ERJ3GEY0R00V	1/10W 0	1	
LB5219	J0JCC0000101	COIL	1	
LB5221	J0JEC0000011	COIL	1	
LB5222	J0JBC0000086	COIL	1	
LB5223	J0JEC0000011	COIL	1	
LB5224	J0JCC0000307	COIL	1	
LB5226	ERJ3GEY0R00V	1/10W 0	1	
LB5227	ERJ3GEY0R00V	1/10W 0	1	
LB5228	ERJ3GEY0R00V	1/10W 0	1	
LB5229	ERJ3GEY0R00V	1/10W 0	1	
LB5230	J0JHC0000045	COIL	1	
LB5231	J0JCC0000307	COIL	1	
LB5232	J0JCC0000307	COIL	1	
LB8201	J0JHC0000045	COIL	1	
LB8205	J0JHC0000045	COIL	1	
LB8603	J0JHC0000045	COIL	1	
LB8808	J0JHC0000045	COIL	1	
LB8809	J0JHC0000045	COIL	1	
LB8810	J0JHC0000045	COIL	1	
LB8811	J0JHC0000045	COIL	1	
P1902	K1KA02BA0072	CONNECTOR(2P)	1	
Q1001	B1DHCD000023	TRANSISTOR	1	
Q1002	B1DHCD000023	TRANSISTOR	1	
Q1003	B1DHCD000023	TRANSISTOR	1	
Q1101	B1BBCF000026	TRANSISTOR	1	
Q1201	B1CFNC000004	TRANSISTOR	1	
Q1202	B1DHCC000039	TRANSISTOR	1	
Q1401	B1DHCD000023	TRANSISTOR	1	
Q1402	B1DHFD000008	TRANSISTOR	1	
Q1412	2SB1218ARL	TRANSISTOR	1	2SB1218A-RTX
Q1622	B1CFHA000002	TRANSISTOR	1	
Q1623	B1BBCF000031	TRANSISTOR	1	
Q1901	B1DFDF000001	TRANSISTOR	1	
Q3202	2SD132800L	TRANSISTOR	1	2SD1328-TX
Q3203	2SD1819A0L	TRANSISTOR	1	
Q3204	2SB1218ARL	TRANSISTOR	1	2SB1218A-RTX
Q4001	2SD1819A0L	TRANSISTOR	1	
Q4002	2SD1819A0L	TRANSISTOR	1	
Q5201	2SD1819A0L	TRANSISTOR	1	
Q5202	2SD1819A0L	TRANSISTOR	1	
Q5211	B1ADPC000004	TRANSISTOR	1	

[illegible]	[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q5215	B1ADPC000004	TRANSISTOR	1	
Q8001	2SB1218ARL	TRANSISTOR	1	2SB1218A-RTX
Q8002	XP0450100L	TRANSISTOR	1	
Q8003	2SB1218ARL	TRANSISTOR	1	2SB1218A-RTX
Q8201	XP0450100L	TRANSISTOR	1	
Q8401	XN0460100L	TRANSISTOR	1	
Q8406	XN0460100L	TRANSISTOR	1	
QR1007	UNR521300L	TRANSISTOR	1	UN5213-TX
QR1008	UNR521300L	TRANSISTOR	1	UN5213-TX
QR1202	UNR521300L	TRANSISTOR	1	UN5213-TX
QR1402	UNR521300L	TRANSISTOR	1	UN5213-TX
QR1411	B1ZBZ0000049	TRANSISTOR	1	
QR1413	B1GDCFJN0011	TRANSISTOR	1	
QR1602	UNR521300L	TRANSISTOR	1	UN5213-TX
QR1603	UNR521300L	TRANSISTOR	1	UN5213-TX
QR3201	B1GDCFJN0011	TRANSISTOR	1	
QR3202	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4001	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4002	B1GDCFJN0011	TRANSISTOR	1	
QR4004	B1GDCFJN0011	TRANSISTOR	1	
QR4005	B1GDCFJN0011	TRANSISTOR	1	
QR4006	B1GFGCAA0001	TRANSISTOR	1	
QR4008	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4009	B1GFGCAA0001	TRANSISTOR	1	
QR4010	B1GDCFJN0011	TRANSISTOR	1	
QR4011	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4013	B1GDCFJN0011	TRANSISTOR	1	
QR4014	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4015	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4016	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4017	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4018	UNR521300L	TRANSISTOR	1	UN5213-TX
QR4702	B1GFGCAA0001	TRANSISTOR	1	
QR4703	B1GFGCAA0001	TRANSISTOR	1	
QR5221	UNR212100L	TRANSISTOR	1	UN2121-TX
QR6001	UNR521300L	TRANSISTOR	1	UN5213-TX
R1001	ERJ2GE0R00X	1/16W 0	1	
R1005	ERJ2RHD103X	1/16W 10K	1	
R1006	ERJ2RHD563X	1/16W 56K	1	
R1014	ERJ2RHD103X	1/16W 10K	1	
R1015	ERJ2RHD333X	1/16W 33K	1	
R1016	ERJ2GEJ183X	1/16W 18K	1	
R1018	ERJ2GEJ822X	1/16W 8.2K	1	
R1019	ERJ2GEJ393X	1/16W 39K	1	
R1020	ERJ2GEJ272X	1/16W 2.7K	1	
R1022	ERJ2RHD123X	1/16W 12K	1	
R1023	ERJ2RHD333X	1/16W 33K	1	
R1027	ERJ2RHD332X	1/16W 3.3K	1	
R1028	ERJ2RHD332X	1/16W 3.3K	1	
R1029	ERJ2RHD333X	1/16W 33K	1	
R1030	ERJ2RHD332X	1/16W 3.3K	1	
R1032	ERJ2RHD183X	1/16W 18K	1	
R1033	ERJ2RHD102X	1/16W 1K	1	
R1034	ERJ2RHD822X	1/16W 8.2K	1	
R1035	ERJ2GEJ331X	1/16W 330	1	

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1037	ERJ2RHD393X	1/16W 39K	1	
R1038	ERJ2RHD102X	1/16W 1K	1	
R1039	ERJ2RHD822X	1/16W 8.2K	1	
R1040	ERJ2RHD821X	1/16W 820	1	
R1042	ERJ2GEJ563X	1/16W 56K	1	
R1043	ERJ2GEJ393X	1/16W 39K	1	
R1044	ERJ3GEYJ102V	1/10W 1K	1	
R1045	ERJ3GEYJ102V	1/10W 1K	1	
R1060	ERJ2GEJ151X	1/16W 150	1	
R1061	ERJ2GEJ822X	1/16W 8.2K	1	
R1063	ERJ2RHD123X	1/16W 12K	1	
R1064	ERJ2RHD333X	1/16W 33K	1	
R1102	ERJ2RHD683X	1/16W 68K	1	
R1103	ERJ2RHD102X	1/16W 1K	1	
R1104	ERJ2RHD103X	1/16W 10K	1	
R1105	ERJ2GEJ561X	1/16W 560	1	
R1106	ERJ3GEYJ220V	1/10W 22	1	
R1107	ERJ3GEYJ100V	1/10W 10	1	
R1110	ERJ2GE0R00X	1/16W 0	1	
R1204	ERJ2GEJ473X	1/16W 47K	1	
R1401	ERJ2GEJ223X	1/16W 22K	1	
R1406	ERJ2RHD223X	1/16W 22K	1	
R1407	ERJ2RHD332X	1/16W 3.3K	1	
R1410	ERJ2GEJ103X	1/16W 10K	1	
R1411	ERJ2GEJ103X	1/16W 10K	1	
R1412	ERJ2GEJ104X	1/16W 100K	1	
R1413	ERJ2GEJ223X	1/16W 22K	1	
R1414	ERJ2GEJ103X	1/16W 10K	1	
R1415	ERJ2GEJ103X	1/16W 10K	1	
R1416	ERJ2GEJ473X	1/16W 47K	1	
R1418	ERJ2GEJ105X	1/16W 1000K	1	
R1419	ERJ2GEJ103X	1/16W 10K	1	
R1621	D1BFR220A007	1/16W 22	1	
R1622	ERJ2RHD103X	1/16W 10K	1	
R1623	ERJ2RHD104X	1/16W 100K	1	
R1624	ERJ2RHD104X	1/16W 100K	1	
R1625	ERJ2RHD104X	1/16W 100K	1	
R1626	ERJ2RHD103X	1/16W 10K	1	
R1627	ERJ2RHD104X	1/16W 100K	1	
R1628	ERJ2RHD473X	1/16W 47K	1	
R1629	ERJ2RHD104X	1/16W 100K	1	
R1630	ERJ2RHD123X	1/16W 12K	1	
R1631	ERJ2RHD563X	1/16W 56K	1	
R1633	ERJ2GEJ102X	1/16W 1K	1	
R1635	ERJ2GEJ473X	1/16W 47K	1	
R1638	ERJ2GEJ102X	1/16W 1K	1	
R1643	ERJ2GEJ103X	1/16W 10K	1	
R1901	ERJ3RBD563V	1/16W 56K	1	
R1902	ERJ3RBD623V	1/16W 62K	1	
R1903	D0FB104JA005	100K	1	
R1904	D0FB104JA005	100K	1	
R1905	D0FB102JA005	1K	1	
R1907	ERJ3GEYJ334V	1/10W 330K	1	
R1908	ERJ3GEYJ224V	1/10W 220K	1	
R1909	ERJ3GEYJ123V	1/10W 12K	1	
R1910	ERJ3RBD471V	1/16W 470	1	
R1911	ERJ3GEYJ393V	1/10W 39K	1	

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1912	D0FB221JA005	220	1	
R1913	D0YBR0000024	0	1	
R1914	D0YBR0000024	0	1	
R1915	ERJ3GEYJ220V	1/10W 22	1	
R1916	ERJ3GEYJ392V	1/10W 3.9K	1	
R1917	ERJ3GEYJ563V	1/10W 56K	1	
R1919	ERJ3RED274V	1/16W 270K	1	
R2501	ERJ2GEJ471X	1/16W 470	1	
R2523	ERJ2GEJ473X	1/16W 47K	1	
R2651	ERJ2GEJ471X	1/16W 470	1	
R2652	ERJ12RQJR68U	1/2W 68	1	
R2653	ERJ2GEJ153X	1/16W 15K	1	
R3004	ERJ2GEJ101X	1/16W 100	1	
R3005	ERJ2GEJ473X	1/16W 47K	1	
R3007	ERJ2GEJ104X	1/16W 100K	1	
R3008	ERJ2GEJ104X	1/16W 100K	1	
R3009	ERJ2GEJ333X	1/16W 33K	1	
R3010	ERJ2GEJ680X	1/16W 68	1	
R3011	ERJ2GEJ182X	1/16W 1.8K	1	
R3013	ERJ2GEJ330X	1/16W 33	1	
R3014	ERJ3RBD333V	1/16W 33K	1	
R3015	ERJ2GEJ331X	1/16W 330	1	
R3016	ERJ2GEJ471X	1/16W 470	1	
R3017	ERJ2GEJ471X	1/16W 470	1	
R3018	ERJ2GEJ471X	1/16W 470	1	
R3019	ERJ3RBD102V	1/16W 1K	1	
R3020	ERJ2GEJ221X	1/16W 220	1	
R3021	ERJ2GEJ105X	1/16W 1000K	1	
R3022	ERJ3RBD222V	1/16W 2.2K	1	
R3023	ERJ3RBD331V	1/16W 330	1	
R3024	ERJ3RBD181V	1/16W 180	1	
R3025	ERJ2GEJ270X	1/16W 27	1	
R3026	ERJ3RBD181V	1/16W 180	1	
R3027	ERJ2GEJ270X	1/16W 27	1	
R3028	ERJ2GEJ103X	1/16W 10K	1	
R3029	ERJ2GEJ103X	1/16W 10K	1	
R3030	ERJ3RBD181V	1/16W 180	1	
R3031	ERJ2GEJ270X	1/16W 27	1	
R3032	ERJ3RBD181V	1/16W 180	1	
R3033	ERJ2GEJ270X	1/16W 27	1	
R3034	ERJ3RBD181V	1/16W 180	1	
R3035	ERJ2GEJ270X	1/16W 27	1	
R3044	ERJ2GEJ472X	1/16W 4.7K	1	
R3203	ERJ2GE0R00X	1/16W 0	1	
R3207	ERJ2GEJ101X	1/16W 100	1	
R3208	ERJ2GEJ101X	1/16W 100	1	
R3209	ERJ2GEJ101X	1/16W 100	1	
R3210	ERJ2GEJ101X	1/16W 100	1	
R3214	ERJ2GEJ821X	1/16W 820	1	
R3217	ERJ3RED750V	1/16W 75	1	
R3218	ERJ2GEJ101X	1/16W 100	1	
R3220	ERJ2GEJ183X	1/16W 18K	1	
R3221	ERJ2GEJ224X	1/16W 220K	1	
R3222	ERJ2GEJ104X	1/16W 100K	1	
R3223	ERJ2GEJ103X	1/16W 10K	1	
R3224	ERJ2GEJ392X	1/16W 3.9K	1	
R3225	ERJ2GEJ104X	1/16W 100K	1	

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3226	ERJ2GEJ102X	1/16W 1K	1	
R3227	ERJ2GEJ222X	1/16W 22K	1	
R3230	ERJ2GEJ681X	1/16W 680	1	
R3231	ERJ2GEJ681X	1/16W 680	1	
R3232	ERJ2GE0R00X	1/16W 0	1	
R3233	ERJ2GEJ332X	1/16W 3.3K	1	
R3234	ERJ2GEJ332X	1/16W 3.3K	1	
R3235	ERJ2GEJ332X	1/16W 3.3K	1	
R3236	ERJ2GEJ105X	1/16W 1000K	1	
R3237	ERJ2GEJ105X	1/16W 1000K	1	
R4001	ERJ2GEJ273X	1/16W 27K	1	
R4002	ERJ2GEJ273X	1/16W 27K	1	
R4003	ERJ2GEJ333X	1/16W 33K	1	
R4004	ERJ2GEJ333X	1/16W 33K	1	
R4005	ERJ2GEJ473X	1/16W 47K	1	
R4006	ERJ2GEJ473X	1/16W 47K	1	
R4007	ERJ2GEJ473X	1/16W 47K	1	
R4008	ERJ2GEJ473X	1/16W 47K	1	
R4009	ERJ2GEJ101X	1/16W 100	1	
R4010	ERJ2GEJ101X	1/16W 100	1	
R4015	ERJ2GEJ821X	1/16W 820	1	
R4016	ERJ2GEJ821X	1/16W 820	1	
R4017	ERJ2GE0R00X	1/16W 0	1	
R4018	ERJ2GE0R00X	1/16W 0	1	
R4019	ERJ2GEJ153X	1/16W 15K	1	
R4020	ERJ2GEJ153X	1/16W 15K	1	
R4023	ERJ2GEJ103X	1/16W 10K	1	
R4024	ERJ2GEJ103X	1/16W 10K	1	
R4025	ERJ2GEJ103X	1/16W 10K	1	
R4026	ERJ2GEJ103X	1/16W 10K	1	
R4031	ERJ2GEJ563X	1/16W 56K	1	
R4032	ERJ2GEJ563X	1/16W 56K	1	
R4033	ERJ2GEJ100X	1/16W 10	1	
R4034	ERJ2GEJ100X	1/16W 10	1	
R4035	ERJ2GEJ103X	1/16W 10K	1	
R4036	ERJ2GEJ103X	1/16W 10K	1	
R4038	ERJ2GEJ104X	1/16W 100K	1	
R4039	ERJ2GEJ103X	1/16W 10K	1	
R4041	ERJ2GEJ102X	1/16W 1K	1	
R4046	ERJ2GEJ473X	1/16W 47K	1	
R4047	ERJ2GEJ473X	1/16W 47K	1	
R4048	ERJ2GEJ222X	1/16W 22K	1	
R4049	ERJ2GEJ222X	1/16W 22K	1	
R4050	ERJ2GEJ473X	1/16W 47K	1	
R4051	ERJ2GEJ473X	1/16W 47K	1	
R4052	ERJ2GEJ222X	1/16W 22K	1	
R4053	ERJ2GEJ102X	1/16W 1K	1	
R4054	ERJ2GEJ104X	1/16W 100K	1	
R4055	ERJ2GEJ472X	1/16W 4.7K	1	
R4057	ERJ2GEJ152X	1/16W 1.5K	1	
R4059	ERJ2GEJ562X	1/16W 5.6K	1	
R4060	ERJ2GEJ562X	1/16W 5.6K	1	
R4065	ERJ2GEJ682X	1/16W 6.8K	1	
R4066	ERJ2GEJ682X	1/16W 6.8K	1	
R4067	ERJ2GEJ334X	1/16W 330K	1	
R4068	ERJ2GEJ334X	1/16W 330K	1	
R4069	ERJ2GEJ222X	1/16W 22K	1	

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4070	ERJ2GEJ222X	1/16W 22K	1	
R4071	ERJ2GEJ472X	1/16W 4.7K	1	
R4072	ERJ2GEJ104X	1/16W 100K	1	
R4073	ERJ2GEJ104X	1/16W 100K	1	
R4075	ERJ2GEJ473X	1/16W 47K	1	
R4077	ERJ2GE0R00X	1/16W 0	1	
R4713	ERJ2GE0R00X	1/16W 0	1	
R4714	ERJ2GE0R00X	1/16W 0	1	
R4725	D0GF270JA002	1/8W 27K	1	
R4726	D0GF270JA002	1/8W 27K	1	
R4727	ERJ2GEJ102X	1/16W 1K	1	
R4728	ERJ2GEJ102X	1/16W 1K	1	
R4729	ERJ2GEJ472X	1/16W 4.7K	1	
R4730	ERJ2GEJ472X	1/16W 4.7K	1	
R4731	D0GF270JA002	1/8W 27K	1	
R4732	D0GF270JA002	1/8W 27K	1	
R4733	ERJ2GEJ102X	1/16W 1K	1	
R4734	ERJ2GEJ102X	1/16W 1K	1	
R4735	ERJ2GEJ472X	1/16W 4.7K	1	
R4736	ERJ2GEJ472X	1/16W 4.7K	1	
R5201	ERJ2GEJ223X	1/16W 22K	1	
R5203	ERJ2GEJ333X	1/16W 33K	1	
R5204	ERJ2GEJ102X	1/16W 1K	1	
R5205	ERJ2GEJ102X	1/16W 1K	1	
R5208	ERJ2GEJ331X	1/16W 330	1	
R5209	ERJ2GEJ331X	1/16W 330	1	
R5210	ERJ2GEJ100X	1/16W 10	1	
R5211	ERJ2GEJ2R2X	1/16W 2.2	1	
R5212	ERJ12YJ270U	1/2W 27	1	
R5213	ERJ2GEJ473X	1/16W 47K	1	
R5214	ERJ2GEJ153X	1/16W 15K	1	
R5215	ERJ2GEJ2R2X	1/16W 2.2	1	
R5216	ERJ12YJ270U	1/2W 27	1	
R5217	ERJ2GEJ473X	1/16W 47K	1	
R5218	ERJ2GEJ100X	1/16W 10	1	
R5219	ERJ3RED910V	1/16W 91	1	
R5220	ERJ3RED910V	1/16W 91	1	
R5221	ERJ2GEJ102X	1/16W 1K	1	
R6003	ERJ2GE0R00X	1/16W 0	1	
R6004	ERJ2GEJ273X	1/16W 27K	1	
R6005	ERJ3RBD103V	1/16W 10K	1	
R6006	ERJ2GEJ332X	1/16W 3.3K	1	
R6007	ERJ3RBD683V	1/16W 68K	1	
R6008	ERJ2GEJ222X	1/16W 22K	1	
R6010	ERJ3RBD333V	1/16W 33K	1	
R6011	ERJ2GE0R00X	1/16W 0	1	
R6012	ERJ2GEJ152X	1/16W 1.5K	1	
R6013	ERJ3RBD103V	1/16W 10K	1	
R6014	ERJ2GEJ122X	1/16W 1.2K	1	
R6019	ERJ2GE0R00X	1/16W 0	1	
R6022	ERJ2GEJ152X	1/16W 1.5K	1	
R6025	ERJ2GEJ331X	1/16W 330	1	
R6026	ERJ2GEJ103X	1/16W 10K	1	
R6027	ERJ2GEJ123X	1/16W 12K	1	
R6028	ERJ2GEJ473X	1/16W 47K	1	
R6030	ERJ3GEY0R00V	1/10W 0	1	
R6032	ERJ2GEJ473X	1/16W 47K	1	

[redacted]	[redacted]	[redacted]	[redacted]	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R6033	ERJ3GEY0R00V	1/10W 0	1	
R6034	ERJ3GEY0R00V	1/10W 0	1	
R6035	ERJ3GEY0R00V	1/10W 0	1	
R6040	ERJ2GEJ103X	1/16W 10K	1	
R6041	ERJ3RBD103V	1/16W 10K	1	
R6042	ERJ3RBD122V	1/16W 1.2K	1	
R6043	ERJ2RHD104X	1/16W 100K	1	
R6044	ERJ2GEJ103X	1/16W 10K	1	
R6046	ERJ2GEJ151X	1/16W 150	1	
R6049	ERJ2GEJ473X	1/16W 47K	1	
R6801	ERJ2GEJ222X	1/16W 22K	1	
R6802	ERJ2GEJ332X	1/16W 3.3K	1	
R6803	ERJ2GEJ472X	1/16W 4.7K	1	
R6804	ERJ2GEJ682X	1/16W 6.8K	1	
R6805	ERJ2GEJ153X	1/16W 15K	1	
R6806	ERJ2GEJ473X	1/16W 47K	1	
R6807	ERJ2GEJ682X	1/16W 6.8K	1	
R6808	ERJ2GEJ153X	1/16W 15K	1	
R6813	ERJ2GEJ122X	1/16W 1.2K	1	
R6814	ERJ2GEJ152X	1/16W 1.5K	1	
R6815	ERJ2GEJ222X	1/16W 22K	1	
R6816	ERJ2GEJ332X	1/16W 3.3K	1	
R6817	ERJ2GEJ472X	1/16W 4.7K	1	
R6818	ERJ2GEJ122X	1/16W 1.2K	1	
R6819	ERJ2GEJ152X	1/16W 1.5K	1	
R6820	ERJ2GEJ220X	1/16W 22	1	
R8003	ERJ3GEY0R00V	1/10W 0	1	
R8015	ERJ2GEJ153X	1/16W 15K	1	
R8016	ERJ2GEJ224X	1/16W 220K	1	
R8017	ERJ2GEJ224X	1/16W 220K	1	
R8037	ERJ2GEJ222X	1/16W 22K	1	
R8038	ERJ2GEJ222X	1/16W 22K	1	
R8039	ERJ2GEJ102X	1/16W 1K	1	
R8040	ERJ2GEJ102X	1/16W 1K	1	
R8042	ERJ2GEJ102X	1/16W 1K	1	
R8043	ERJ2GEJ102X	1/16W 1K	1	
R8045	ERJ2GEJ561X	1/16W 560	1	
R8046	ERJ2GEJ333X	1/16W 33K	1	
R8047	ERJ2GEJ273X	1/16W 27K	1	
R8048	ERJ2GEJ473X	1/16W 47K	1	
R8049	ERJ2GEJ102X	1/16W 1K	1	
R8203	ERJ2GEJ472X	1/16W 4.7K	1	
R8209	ERJ2GEJ102X	1/16W 1K	1	
R8210	ERJ2GEJ102X	1/16W 1K	1	
R8212	ERJ2GEJ102X	1/16W 1K	1	
R8218	ERJ2GEJ102X	1/16W 1K	1	
R8219	ERJ2GEJ101X	1/16W 100	1	
R8220	ERJ2GEJ473X	1/16W 47K	1	
R8221	ERJ2GEJ221X	1/16W 220	1	
R8222	ERJ2GEJ181X	1/16W 180	1	
R8223	ERJ2GEJ151X	1/16W 150	1	
R8225	ERJ2GEJ392X	1/16W 3.9K	1	
R8226	ERJ2GEJ332X	1/16W 3.3K	1	
R8231	ERJ2GEJ562X	1/16W 5.6K	1	
R8243	ERJ2GE0R00X	1/16W 0	1	
R8250	ERJ2GEJ393X	1/16W 39K	1	
R8251	ERJ2GEJ393X	1/16W 39K	1	

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R8252	ERJ2GEJ823X	1/16W 82K	1	
R8253	ERJ2GE0R00X	1/16W 0	1	
R8254	ERJ2GEJ472X	1/16W 4.7K	1	
R8255	ERJ2GEJ823X	1/16W 82K	1	
R8256	ERJ2GEJ332X	1/16W 3.3K	1	
R8257	ERJ2GEJ152X	1/16W 1.5K	1	
R8258	ERJ2GEJ103X	1/16W 10K	1	
R8259	ERJ2GE0R00X	1/16W 0	1	
R8402	ERJ2GEJ184X	1/16W 180K	1	
R8403	ERJ2GEJ473X	1/16W 47K	1	
R8404	ERJ2GEJ153X	1/16W 15K	1	
R8405	ERJ2GEJ563X	1/16W 56K	1	
R8406	ERJ2GEJ563X	1/16W 56K	1	
R8407	ERJ2GEJ223X	1/16W 22K	1	
R8408	ERJ2GEJ103X	1/16W 10K	1	
R8409	ERJ2GEJ183X	1/16W 18K	1	
R8410	ERJ2GEJ103X	1/16W 10K	1	
R8413	ERJ2GEJ472X	1/16W 4.7K	1	
R8425	ERJ2GEJ470X	1/16W 47	1	
R8428	ERJ2GEJ123X	1/16W 12K	1	
R8429	ERJ2GEJ123X	1/16W 12K	1	
R8430	ERJ2GEJ470X	1/16W 47	1	
R8605	ERJ2GEJ101X	1/16W 100	1	
R8606	ERJ2GEJ562X	1/16W 5.6K	1	
R8608	ERJ2GEJ562X	1/16W 5.6K	1	
R8610	ERJ2GEJ562X	1/16W 5.6K	1	
R8614	ERJ2GE0R00X	1/16W 0	1	
R8615	ERJ2GE0R00X	1/16W 0	1	
R8616	ERJ2GEJ103X	1/16W 10K	1	
R8617	ERJ2GEJ103X	1/16W 10K	1	
R8620	ERJ2GEJ562X	1/16W 5.6K	1	
R8621	ERJ2GEJ562X	1/16W 5.6K	1	
R8622	ERJ2GEJ153X	1/16W 15K	1	
R8623	ERJ2GEJ153X	1/16W 15K	1	
R8801	ERJ2GE0R00X	1/16W 0	1	
R8804	ERJ2GEJ473X	1/16W 47K	1	
RX2651	D1H81034A024	RESISTOR-RESISTOR	1	
RX3001	D1H81034A024	RESISTOR-RESISTOR	1	
RX3002	D1H81034A024	RESISTOR-RESISTOR	1	
RX3003	D1H447220001	RESISTOR-RESISTOR	1	
RX3006	D1H422020001	RESISTOR-RESISTOR	1	
RX3013	D1H84724A024	RESISTOR-RESISTOR	1	
RX4001	D1H81034A024	RESISTOR-RESISTOR	1	
RX6001	D1H81034A024	RESISTOR-RESISTOR	1	
RX6002	D1H81034A024	RESISTOR-RESISTOR	1	
S5201	ESE11MV9T	SWITCH	1	
S5202	ESE11MV9T	SWITCH	1	
S6001	K0H1BA000432	SWITCH	1	
S6002	K0H1BA000432	SWITCH	1	
S6003	K0H1BA000432	SWITCH	1	
S6004	K0H1BA000432	SWITCH	1	
S6005	ESE11MV9T	SWITCH	1	
S6801	K0H1BA000432	SWITCH	1	
S6802	K0H1BA000432	SWITCH	1	
S6803	K0H1BA000432	SWITCH	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
S6804	K0H1BA000432	SWITCH	1	
S6805	K0H1BA000432	SWITCH	1	
S6806	K0H1BA000432	SWITCH	1	
S6807	K0H1BA000432	SWITCH	1	
S6808	K0H1BA000432	SWITCH	1	
S6809	K0H1BA000432	SWITCH	1	
S6810	K0H1BA000432	SWITCH	1	
S6811	K0H1BA000432	SWITCH	1	
S6813	K0H1BA000432	SWITCH	1	
S6814	K0H1BA000432	SWITCH	1	
S6815	K0H1BA000432	SWITCH	1	
S6816	K0H1BA000432	SWITCH	1	
S6817	K0H1BA000432	SWITCH	1	
S6818	K0H1BA000432	SWITCH	1	
T1101	G5ZZ00000071	TRANSFORMER	1	⚠
T1901	ETJV15ZE1KAB	TRANSFORMER	1	⚠
TH6001	ERTJ0EG103FA	THERMISTOR	1	
X3001	H0J270500080	CRYSTAL OSCILLATOR	1	
X6001	H2D800400017	CRYSTAL OSCILLATOR	1	
X8001	H0J357400059	CRYSTAL OSCILLATOR	1	

20. Schematic Diagram for printing with A4

Ref No.	Q1001							Q1002						Q1003					
MODE	1	2	3	4	5	6		1	2	3	4	5	6	1	2	3	4	5	6
PLAY	1.2	1.2	8.2	9.0	1.2	1.2		2.6	2.6	6.2	9.0	2.5	2.5	5.6	5.6	3.3	9.0	5.6	5.6
STOP	1.2	1.2	8.1	9.0	1.2	1.2		2.5	2.5	6.2	9.0	2.5	2.5	5.5	5.5	3.3	9.0	5.5	5.5

Ref No.	Q1101				Q1201				Q1202				Q1401							
MODE	E	C	B		S	D	G		S	D	G		1	2	3	4	5	6		
PLAY	0	10.6	0.2		1.1	1.2	3.3		3.2	3.2	0		3.7	3.7	9.9	11.0	3.7	3.7		
STOP	0	11.0	0.2		1.1	1.2	3.3		3.2	3.2	0		4.0	4.0	8.9	10.8	4.0	4.0		

Ref No.	Q1402								Q1412				Q1622				Q1623			
MODE	1	2	3	4	5	6	7	8	E	C	B		S	D	G		E	C	B	
PLAY	11.8	11.8	11.8	8.0	8.8	8.8	8.8	8.8	11.6	11.6	10.9		0	0	4.9		9.3	4.9	8.8	
STOP	11.8	11.8	11.8	8.0	8.6	8.6	8.6	8.6	11.5	11.4	10.8		0	0	4.9		9.3	5.3	8.8	

Ref No.	Q3202				Q3203				Q3204				Q4001				Q4002			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
PLAY	0	0.6	-0.1		1.3	4.9	1.4		1.6	0	1.0		8.3	9.0	9.0		0	3.1	0	
STOP	0	0.9	0.4		1.0	4.9	1.4		1.6	0	1.0		8.3	9.0	9.0		0	3.1	0	

Ref No.	Q5201				Q5202				Q5211				Q5215				Q8001			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
PLAY	0.4	3.8	1.0		0	5.0	0		4.4	2.2	3.8		5.0	0.1	5.0		0.8	0	0.1	
STOP	0	5.0	0		0	5.0	0		5.0	0.7	5.0		5.0	0	5.0		0.7	0	0	

Ref No.	Q8002							Q8003				Q8201							
MODE	1	2	3	4	5	6		E	C	B		1	2	3	4	5	6		
PLAY	3.0	2.8	5.0	2.5	3.1	5.0		0.8	0	0.1		0.5	0.2	0.5	0.5	1.0	3.2		
STOP	2.8	2.8	5.0	2.2	2.8	5.0		0.7	0	0		0.5	0.2	0.5	0.5	1.0	3.2		

Ref No.	Q8401							Q8406											
MODE	1	2	3	4	5	6		1	2	3	4	5	6						
PLAY	7.3	0.8	1.4	-12.3	1.9	1.4		7.5	1.4	1.9	-12.5	1.4	0.8						
STOP	7.3	0.8	1.4	-12.3	1.9	1.4		7.5	1.4	1.9	-12.5	1.4	0.8						

Ref No.	QR1007				QR1008				QR1202				QR1402							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
PLAY	0	2.9	0		0	2.9	0.4		0	0	3.3		0	0	2.7					
STOP	0	2.9	0		0	2.9	0.4		0	0	3.3		0	0	2.7					

Ref No.	QR1411							QR1413				QR1602				QR1603			
MODE	1	2	3	4	5	6		E	C	B		E	C	B		E	C	B	
PLAY	5.1	0.2	0.2	2.7	0	11.6		9.0	0	9.0		0	1.3	0		0	4.9	0	
STOP	5.1	0.2	0.1	2.7	0	11.5		9.0	0	9.0		0	1.3	0		0	4.9	0	

Ref No.	QR3201				QR3202				QR4001				QR4002				QR4004			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
PLAY	4.9	-0.2	4.9		0	4.9	0.1		0	0	3.3		9.0	9.0	7.7		2.9	-0.1	2.8	
STOP	4.9	-0.1	4.9		0	4.9	0.1		0	0	3.3		9.0	9.0	7.7		2.6	2.5	0	

Ref No.	QR4005				QR4006								QR4008							
MODE	E	C	B		1	2	3	4	5	6			E	C	B					
PLAY	2.9	-0.1	2.8		0	-1.1	0	0	-1.5	0			0	0	0.2					
STOP	2.6	2.4	0.5		0	-0.8	0	0	-0.1	0			0	0	0.2					

Ref No.	QR4009							QR4010				QR4011				QR4013			
MODE	1	2	3	4	5	6		E	C	B		E	C	B		E	C	B	
PLAY	0	-1.3	0	0	-1.3	0		3.2	-0.1	3.1		0	0.1	3.1		0	0.8	0	
STOP	0	0.6	0	0	0.6	0		3.2	-0.1	3.1		0	0.1	3.1		0	0	3.2	

Ref No.	QR4014				QR4015				QR4016				QR4017				QR4018			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
PLAY	0	-1.0	0		0	2.8	0		0	2.8	0		0	2.2	0		0	0	2.7	
STOP	0	-0.6	0		0	0	0		0	0	4.5		0	2.0	0		0	0	2.7	

Ref No.	QR4702							QR4703						QR5221					
MODE	1	2	3	4	5	6		1	2	3	4	5	6		E	C	B		
PLAY	0	-1.3	0	0	-5.2	0		0	-1.6	0	0	-5.2	0		3.2	3.2	0.1		
STOP	0	0.7	0	0	0.7	0		0	0.7	0	0	0.7	0		3.2	-0.1	3.2		

Ref No.	QR6001																		
MODE	E	C	B																
PLAY	0	0.1	3.3																
STOP	0	0.1	3.3																

Ref No.	IC3205																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
PLAY	0	0	0	3.3	3.3	3.3	0	0	0	3.3	0	0	3.3	3.3						
STOP	0	0	0	3.3	3.3	3.3	0	0	0	3.3	0	0	3.3	3.3						
Ref No.	IC4001						IC4002													
MODE	1	2	3	4	5		1	2	3	4	5									
PLAY	5.4	0	5.4	0	5.0		5.4	0	3.3	0	5.0									
STOP	5.4	0	5.4	0	5.0		5.4	0	3.3	0	5.0									
Ref No.	IC4003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	0	3.2	2.8	3.2	1.6	0.8	1.6	1.6	0	0	5.0	0	2.5	2.4	2.5	0				
STOP	0	3.2	2.8	3.2	1.6	0	1.6	1.6	0	0	5.0	0	2.5	2.4	2.5	5.0				
Ref No.	IC4004																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	2.5	2.5	2.5	2.5	0	0	0	0	0.1	0	2.5	2.4	2.4	0	2.5	5.0				
STOP	2.5	2.5	2.5	2.5	0	0	0	0	0.1	0	2.5	2.4	2.4	0	2.5	5.0				
Ref No.	IC4005									IC4006										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
PLAY	4.2	4.2	4.2	0	4.2	4.2	4.2	8.3		2.2	4.2	4.2	2.2	4.0	0	8.3	4.1			
STOP	4.2	4.2	4.2	0	4.2	4.2	4.2	8.3		1.9	4.2	4.2	1.9	4.0	0	8.3	3.9			
Ref No.	IC4008																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	3.2	3.2	0	3.2	0.5	0	1.6	1.6	0	1.6	1.6	0	1.6	3.2	1.6	1.6	1.6	0
STOP	0	0	3.2	3.2	0	3.2	0.1	0	1.6	1.6	0	1.6	1.6	0	1.6	3.2	1.6	1.6	1.6	0
Ref No.	IC4008									IC4009										
MODE	21	22	23	24	25	26	27	28		1	2	3	4	5	6	7	8			
PLAY	0	1.4	0	1.6	1.6	1.6	3.2	1.6		2.5	2.5	2.5	0	4.2	4.2	4.2	8.3			
STOP	0	1.4	0	1.6	1.6	1.6	3.2	1.6		2.5	2.5	2.5	0	4.2	4.2	4.2	8.3			
Ref No.	IC5201									IC6001										
MODE	1	2	3	4	5	6	7	8		1	2	3	4							
PLAY	0	0	0	0	3.2	0	0.2	3.2		3.3	1.8	0	0							
STOP	0	0	0	0	0	0	0	3.2		3.3	1.9	0	0							
Ref No.	IC6002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	3.3	0.3	2.9	3.3	3.3	3.3	0	3.3	3.3	3.3	1.7	1.5	0	0	3.3	0	3.3	0	0
STOP	0	3.3	0.2	2.9	3.3	3.3	3.3	0	3.3	3.3	3.3	1.7	1.5	0	0	3.3	0	3.3	0	0
Ref No.	IC6002																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	0	0.1	0.1	0	0.3	0.7	3.3	3.3	0	0	3.2	3.3	3.3	2.9	0	0	0	0	3.0	2.6
STOP	0	0	0	0	0.2	0.7	3.3	3.3	0	0	3.2	3.3	3.3	2.9	0	0	0	0	3.0	2.7
Ref No.	IC6002																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	2.9	3.3	3.3	3.3	0.1	3.3	2.7	3.3	3.3	0	0	3.3	3.3	0	3.3	3.3	0.4	0	0	0
STOP	2.9	3.3	3.3	3.3	0.1	3.3	2.7	3.3	3.3	0	0	3.3	3.3	0	3.3	3.3	0.3	0	0	0
Ref No.	IC6002																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	3.3	0	0	0	3.3	3.3	3.3	3.3	3.3	0	3.3	3.3	3.3	0	3.3	0	0	0	3.3	3.3
STOP	3.3	0	0	0	3.3	3.3	3.3	3.3	3.3	0	3.3	3.3	3.3	0	3.3	0	0	0	3.3	3.3
Ref No.	IC6003						IC6007													
MODE	1	2	3	4	5		1	2	3	4										
PLAY	0.7	0.7	0	0.6	3.2		3.3	3.3	0.2	0										
STOP	0.7	0.7	0	0.6	3.2		3.3	3.3	0	0										
Ref No.	IC8001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	0	2.0	5.0	3.4	3.4	3.4	0	0	0	0	3.8	2.5	2.5	2.5	2.5	7.5	2.5	2.5
STOP	0	0	0	2.0	5.0	3.4	3.4	3.4	0	0	0	0	3.8	2.5	2.5	2.5	2.5	7.5	2.5	2.5
Ref No.	IC8001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	2.5	0	1.4	1.5	1.5	0	0.3	0	0.3	0.3	0.1	0	3.3	3.3	0	1.8	2.6	5.0	0	3.3
STOP	2.5	0	1.5	1.6	1.6	0	0.2	0	0.5	0.2	0.4	0	3.3	3.3	0	1.8	2.6	5.0	0	3.3
Ref No.	IC8001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	2.9	0.3	0	3.3	1.6	3.3	0.3	3.7	3.3	3.2	3.2	3.0	2.3	2.7	0.1	5.0	3.6	2.5	0.2	2.9
STOP	2.9	0.2	0	3.3	1.6	3.3	0.3	3.4	3.3	3.2	3.2	2.8	2.2	2.7	0	5.0	3.6	2.5	0.2	2.9
Ref No.	IC8001					IC8202														
MODE	61	62	63	64		1	2	3	4	5	6	7	8							
PLAY	0	2.5	2.0	2.0		2.9	0	0	0	3.3	3.2	0.4	3.3							
STOP	0	2.5	2.0	2.0		2.9	0	0	0	3.3	3.2	0.4	3.3							
Ref No.	IC8401									IC8403										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
PLAY	0	0	0	0	3.3	3.3	0	3.3		-2.5	-2.5	-2.5	-12.4	1.6	1.6	1.4	7.5			
STOP	0	0	0	0	3.3	3.3	0	3.3		-2.5	-2.5	-2.5	-12.4	1.6	1.6	1.4	7.5			
Ref No.	IC8602																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
PLAY	1.5	1.5	1.2	1.5	1.5	1.3	0	1.2	1.5	1.5	3.3	3.3	3.3	3.3						
STOP	1.6	1.6	1.4	1.6	1.6	1.3	0	1.3	1.5	1.5	3.3	3.3	3.3	3.3						
Ref No.	IC8801						IC8802													
MODE	1	2	3	4	5		1	2	3											
PLAY	5.4	0	3.3	0	5.0		3.3	5.0	0											
STOP	5.4	0	3.3	0	5.0		3.3	5.0	0											

Ref No.	IC3004																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	0	1.1	1.1	0.9	0.8	0.8	1.1	1.4	1.4	1.2	1.3	1.2	1.2	0	3.2	1.1	1.1	1.2	1.3	1.3
STOP	0	1.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	3.2	1.1	0.8	1.1	1.0	0.8
Ref No.	IC3004																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	1.3	1.2	0.9	0	1.1	0.8	1.2	1.7	1.6	1.1	1.1	0	3.2	0.5	3.2	0.8	0.9	1.3	1.7	1.3
STOP	0.9	0.5	1.0	0	1.1	0.3	1.5	1.8	0.8	1.3	1.3	0	3.2	0.8	3.2	1.4	1.3	1.1	1.7	1.2
Ref No.	IC3004																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	1.9	1.4	1.4	1.8	0	3.2	3.2	0	3.2	0	0	3.0	3.0	2.6	2.9	3.2	3.2	2.8	0	0
STOP	2.0	1.3	1.5	2.1	0	3.2	3.2	0	3.2	0	0	3.0	3.0	3.2	3.2	3.2	3.2	2.8	0	3.2
Ref No.	IC3004																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
PLAY	0.1	0	1.1	3.1	1.9	3.2	3.2	3.2	3.2	1.4	1.6	0	3.2	3.2	3.2	3.2	3.2	0	3.2	3.2
STOP	3.2	0	1.1	3.2	3.2	0	0	0	3.2	1.6	1.6	0	3.2	3.2	3.2	3.2	3.2	0	3.2	3.2
Ref No.	IC3004																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
PLAY	3.2	3.2	0.9	0	2.2	1.7	0	0	1.7	3.2	0.3	0.3	1.8	1.8	1.6	1.6	1.6	1.6	3.2	1.8
STOP	3.2	3.2	0.9	0	2.2	1.7	0	0	1.7	3.2	0.2	0.2	0	1.8	1.6	1.6	1.6	1.6	3.2	3.2
Ref No.	IC3004																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
PLAY	1.3	0	0.2	1.0	0.2	0	2.2	1.6	2.6	2.7	2.7	2.6	2.7	2.6	2.4	2.5	2.4	2.5	1.8	1.6
STOP	1.3	0	0	0	0	0	0.3	1.6	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.9	1.6
Ref No.	IC3004																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
PLAY	1.5	1.6	0	1.6	1.4	3.2	0.8	0.8	0.5	3.2	2.1	1.0	1.0	2.1	0	0.5	0.6	3.2	0	3.2
STOP	1.6	1.6	0	1.6	1.6	3.2	0.8	0.8	0.4	3.2	2.1	1.0	1.0	2.1	0	0.4	0.8	3.2	0	3.2
Ref No.	IC3004																			
MODE	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
PLAY	0.5	1.5	1.5	0	1.1	1.6	1.6	1.6	0.8	0	0	0.8	1.3	0	3.2	0	0	0	0	0
STOP	0	1.5	0	0	1.1	1.4	1.6	1.6	0	0	0	0.5	1.3	0	3.2	0	0	0	0	0
Ref No.	IC3004																			
MODE	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
PLAY	0	0	0	3.2	0	0	3.2	3.2	0	0	0	0	0	0	0	0	3.2	2.0	2.4	2.7
STOP	0	0	0	3.2	0	0	3.2	3.2	0	0	0	0	0	0	0	0	3.2	2.9	2.7	2.8
Ref No.	IC3004																			
MODE	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
PLAY	2.5	2.6	2.5	3.2	0	2.6	2.3	2.4	2.3	2.4	2.3	2.4	2.6	3.2	0	2.4	2.4	1.0	1.9	1.9
STOP	3.0	2.9	3.2	3.2	0	3.0	2.9	2.9	3.1	2.9	3.0	3.2	2.9	3.2	0	2.7	2.8	1.1	2.6	2.6
Ref No.	IC3004																			
MODE	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
PLAY	3.1	0	1.5	3.2	1.5	0	3.0	3.0	2.8	0	1.5	0	0	1.1	1.6	0	0	0	3.2	1.5
STOP	3.1	0	1.5	3.2	1.5	0	3.1	3.1	3.0	0	2.0	0	0	1.1	1.5	0	0	0	3.2	1.4
Ref No.	IC3004																	IC3007		
MODE	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256		1	2	3
PLAY	0.2	1.7	0.3	1.7	0.4	1.3	1.7	0	3.2	0	0	0	0	0	0	0		0	3.1	3.2
STOP	0	1.5	0	1.5	0	1.2	1.3	0	3.2	0	0	0	0	0	0	0		0	3.1	3.1
Ref No.	IC3009																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.2	2.5	3.2	2.4	2.4	0	2.4	2.3	3.2	2.3	2.5	0	2.4	3.2	2.0	3.1	3.0	3.0	2.8	1.6
STOP	3.2	2.7	3.2	3.0	3.0	0	2.9	3.1	3.2	3.0	2.9	0	2.8	3.2	2.6	3.1	3.1	3.1	3.0	1.9
Ref No.	IC3009																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	1.6	0	0.3	0.4	0.4	1.8	3.2	0	1.3	1.7	1.7	1.5	0	0	0	0	3.2	1.5	1.9	0
STOP	1.5	0	0	0.1	0.1	1.3	3.2	0	1.5	1.5	1.5	1.4	0	0	0	0	3.2	1.5	2.6	0
Ref No.	IC3009																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
PLAY	0	2.4	3.2	2.4	2.5	0	2.5	2.7	3.2	2.7	2.8	0	2.3	0						
STOP	0	2.8	3.2	3.0	2.9	0	2.9	3.0	3.2	2.9	2.8	0	2.9	0						
Ref No.	IC3201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	4.9	0	0	0	0	0.2	0	0.5	2.2	0	1.6	0	2.1	3.3	2.1	4.9	2.2	2.2	0	2.2
STOP	4.9	0	0	0	0	0.1	0	0.5	2.1	0	1.5	0	2.1	3.3	2.1	4.9	2.2	2.2	0	2.2
Ref No.	IC3201																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
PLAY	2.2	0	1.6	1.6	0	4.5	0	0	4.4	0	0	-0.2								
STOP	2.2	0	1.3	1.3	0	4.4	0	0	4.4	4.4	0	-0.3								
Ref No.	IC3202																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	1.6	1.6	0	0	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STOP	0	1.6	1.6	0	0	3.3	0	0	0	0	0	0	2.3	0	0	0	0	0	0	0
Ref No.	IC3202																			
MODE	21	22	23	24																
PLAY	3.3	2.9	3.3	3.3																
STOP	3.3	2.9	3.2	3.3																
Ref No.	IC3203																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	-0.2	0.2	-0.2	-0.2	0.2	0	0	0	0.1	0	1.6	0.5	0.5	0	1.6	4.9				
STOP	-0.2	0.1	-0.2	0.1	0.1	0	0	0	0.1	0	1.6	0.4	0.4	0	1.6	4.9				
Ref No.	IC3204																			
MODE	1	2	3	4	5	6	7	8												
PLAY	1.4	2.7	0	1.6	1.7	3.3	3.3	0												
STOP	1.4	2.8	0	1.6	1.7	3.3	3.3	0												

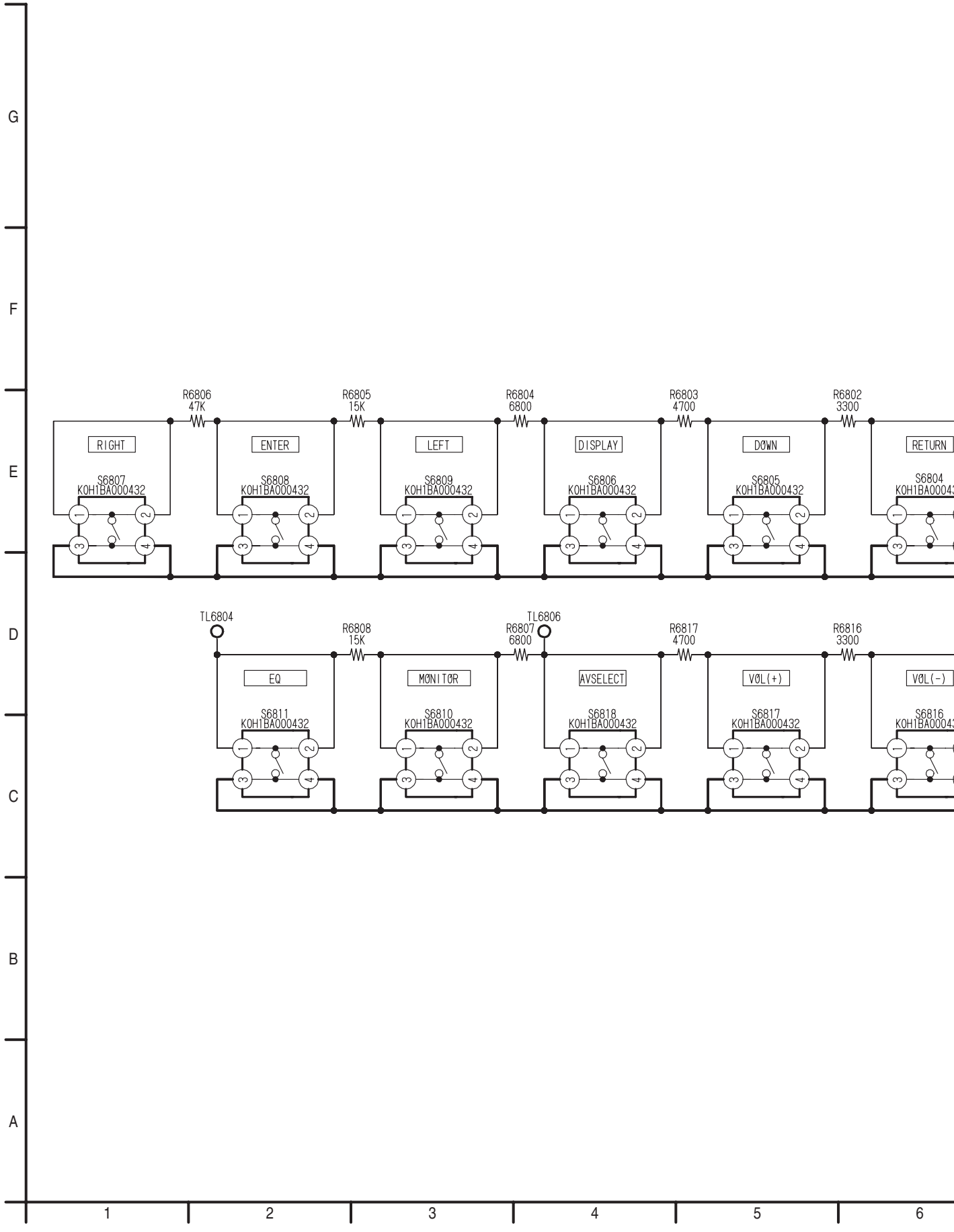
Ref No.	IC1001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0.3	9.0	9.0	8.2	0	0	6.1	9.0	3.3	0	0	0.1	2.3	1.8	1.1	1.3	1.0	1.0	2.1	1.1
STOP	0.8	9.0	9.0	8.2	0	0	6.2	9.0	3.4	0	0	0.1	2.3	1.8	1.1	1.3	1.0	1.0	2.1	1.1
Ref No.	IC1001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	1.5	1.0	1.0	1.4	1.1	1.9	1.0	1.7	0	0	0	9.0	2.5	1.0	1.0	1.3	1.1	1.8	0.5	0
STOP	1.5	1.0	1.0	1.4	1.1	1.9	1.0	1.7	0	0	0	9.0	2.5	1.0	1.0	1.3	1.1	1.8	0.2	0
Ref No.	IC1001																			
MODE	41	42	43	44	45	46	47	48												
PLAY	0.5	1.0	0	0	3.3	3.3	3.3	0												
STOP	0.2	1.0	0	0	3.3	3.3	3.3	0												
Ref No.	IC1003							IC1004						IC1101						
MODE	1	2	3	4	5	6		1	2	3	4	5		1	2	3	4	5		
PLAY	3.3	0	1.3	5.0	0	5.4		5.4	0	5.4	0	5.0		5.4	0	3.3	0	5.0		
STOP	3.3	0	1.3	5.0	0	5.4		5.4	0	5.4	0	5.0		5.4	0	3.3	0.6	5.0		
Ref No.	IC1401									IC1411						IC1412				
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5		1	2	3	4	
PLAY	8.9	0	0	1.2	11.7	0	8.0	11.8		11.3	0	3.3	9.9	11.0		3.3	8.9	-0.1	0	
STOP	8.7	0	0	1.2	11.7	0	8.0	11.8		11.1	0	3.3	8.9	10.8		3.3	9.0	0	0	
Ref No.	IC1601																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	1.3	0.9	5.0	9.3	4.5	0.3	1.0	1.0	0.5	0.9	4.5	0.3	5.6	5.6	0	8.9				
STOP	1.3	0.9	5.0	9.3	4.5	0.2	1.0	1.0	0.7	0.7	4.5	0.2	5.4	5.3	0	8.9				
Ref No.	IC2601																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	1.6	1.6	1.5	1.6	1.6	1.6	0	5.4	3.2	0	3.1	2.4	2.7	2.8	2.4	2.4	2.4	2.4	0	0
STOP	1.6	1.6	1.6	1.6	1.6	1.6	0	5.4	0	0	2.7	2.7	2.7	2.7	2.4	2.4	2.4	2.4	0	0
Ref No.	IC2601																			
MODE	21	22	23	24	25	26	27	28												
PLAY	5.4	5.4	1.6	1.6	1.6	1.6	3.2	2.8												
STOP	5.4	5.4	1.6	1.6	1.6	1.6	0	2.8												
Ref No.	IC2651																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	0	0	0	0	3.5	0	0	2.9	2.9	0	0	2.9	0.8	0	0.6	0	2.4	0
STOP	0	0.1	0.1	0.1	0	0.1	0.1	0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0	0	0	5.0	5.0
Ref No.	IC2651																			
MODE	21	22	23	24	25	26	27	28												
PLAY	1.6	1.4	3.2	2.5	5.0	0	5.4	5.4												
STOP	1.6	1.6	0	5.0	5.0	0	5.4	5.4												
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	1.2	0	3.2	0	3.2	0	0	0	0	0	3.2	3.1	3.2	3.2	0.3	0.9	0.9	1.2	1.7	1.3
STOP	0.5	1.1	0.3	1.5	1.8	0.9	1.3	1.2	0.8	0	3.2	3.1	3.2	3.2	0.3	1.4	1.3	1.1	1.7	1.2
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	1.9	1.3	1.4	1.7	1.9	1.6	0	1.5	1.0	0.9	0.8	0.9	1.1	1.4	1.4	1.3	3.2	1.3	1.1	1.1
STOP	2.1	1.3	1.5	2.1	0.5	1.4	0	2.5	1.1	0.5	0.5	-1.2	0.9	-0.5	1.5	0.8	3.2	-0.1	0.9	1.3
Ref No.	IC3001									IC3002										
MODE	41	42	43	44	45	46	47	48		1	2	3	4	5	6	7	8			
PLAY	1.1	1.1	1.2	1.3	1.3	0	3.2	1.4		0	0	0	0	3.2	3.2	0	3.2			
STOP	1.1	0.8	1.1	1.1	0.9	0	3.2	0.9		0	0	0	0	3.2	3.2	0	3.2			
Ref No.	IC3004																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	3.2	0	0	0	0	3.2	0	0	0	0	0	0	0	0	3.2	1.9	1.6	0
STOP	0	0	3.2	0	0	0	0	3.2	0	0	0	0	0	0	0	0	3.2	3.2	3.2	0.5

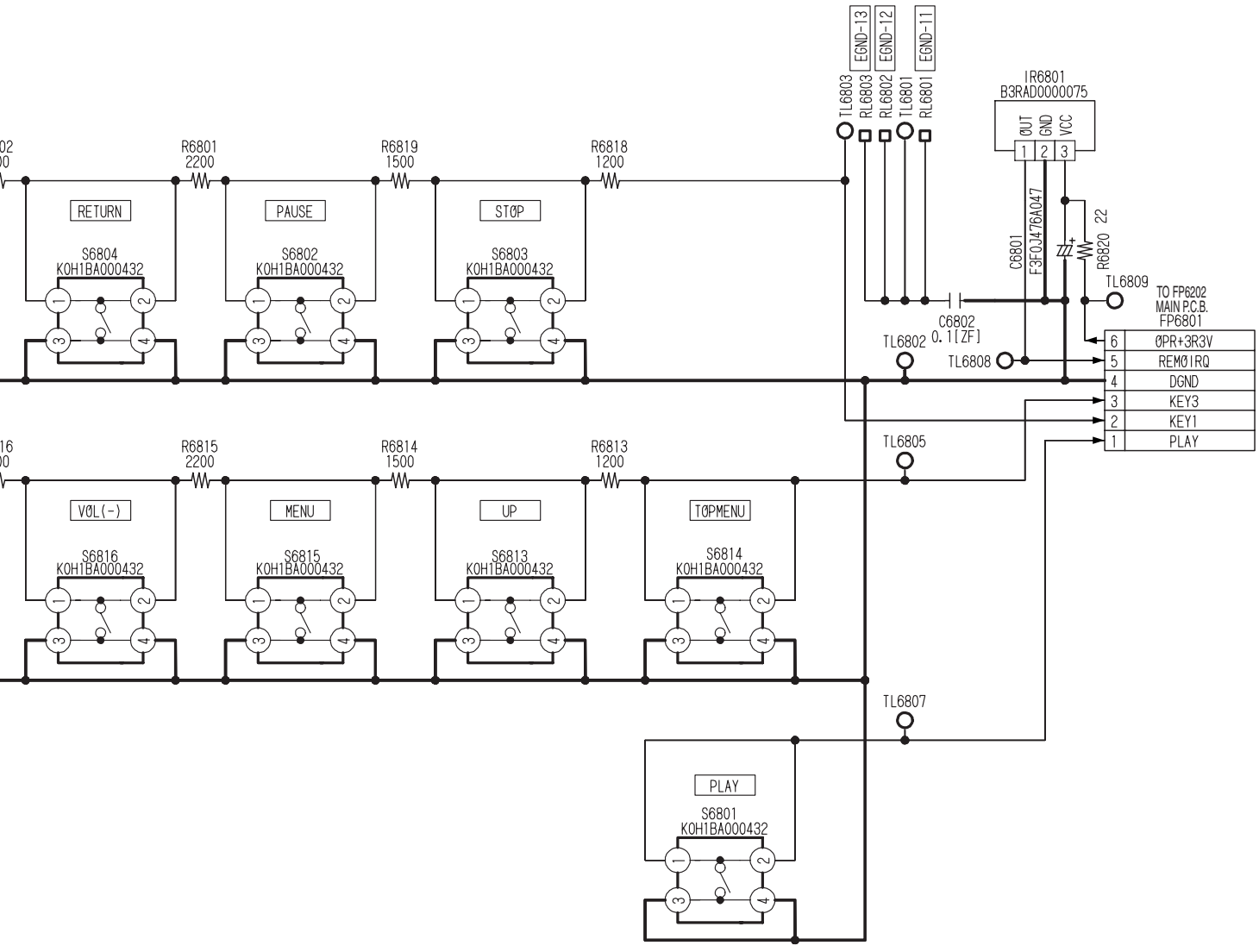
Ref No.	IC1901																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.3	1.5	1.2	1.7	0.1	1.6	0.1	1.1	1.3	0.5	4.9	2.3	1.6	2.8	0.1	1.6	1.7	-	-	8.7
STOP	3.3	1.5	1.2	1.7	0.1	1.6	0.1	1.1	1.3	0.5	4.9	2.3	1.6	2.8	0.1	1.6	1.7	-	-	8.7

Ref No.	Q1901																			
MODE	1	2	3	4	5	6	7	8												
PLAY	0.1	1.7	0.1	1.6	9.9	9.8	9.4	9.4												
STOP	0.1	1.7	0.1	1.6	9.9	9.8	9.4	9.4												

出险

16.11. OPERATION SECTION (OPERATION P.C.B.) SCHEMATIC DIAGRAM

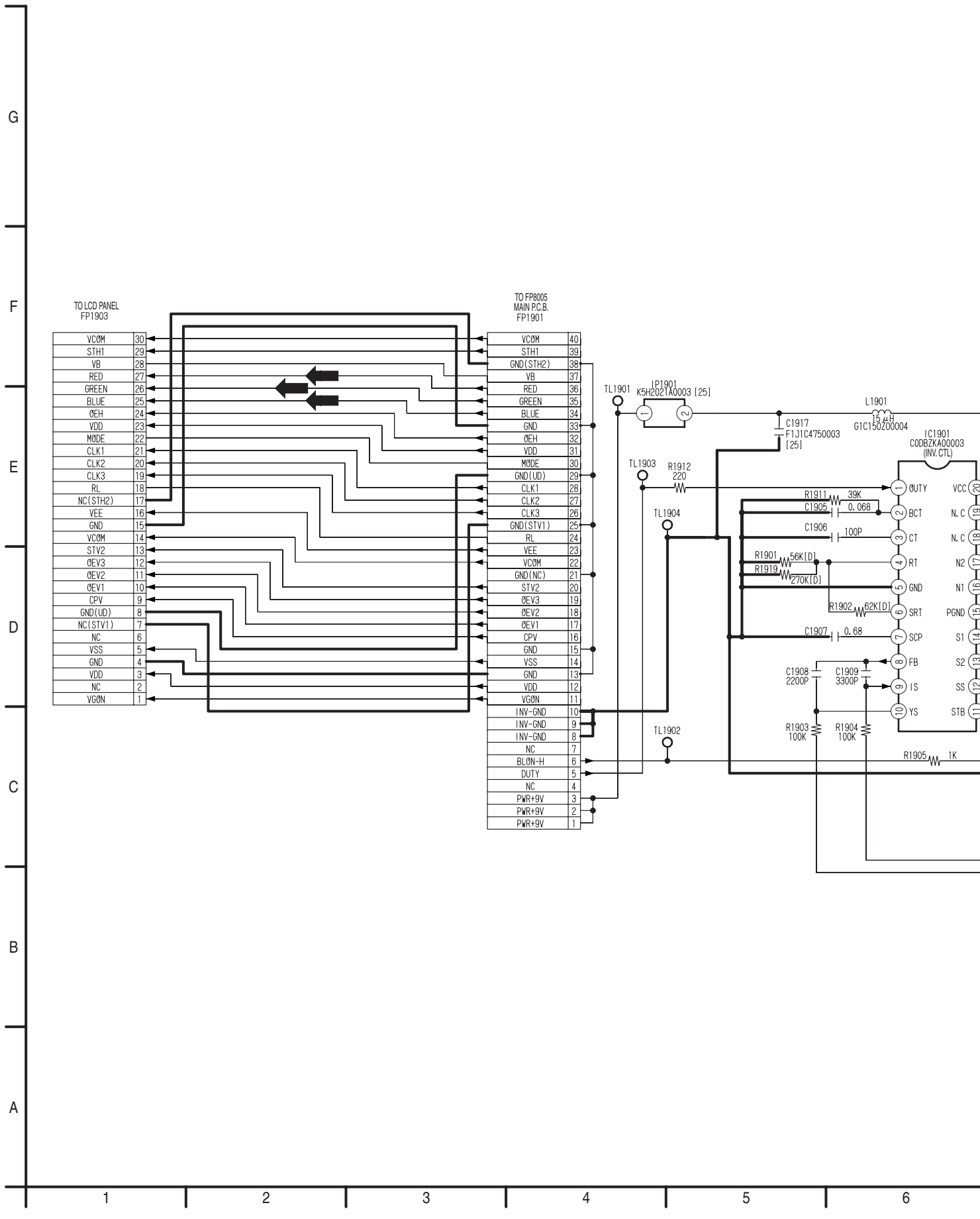




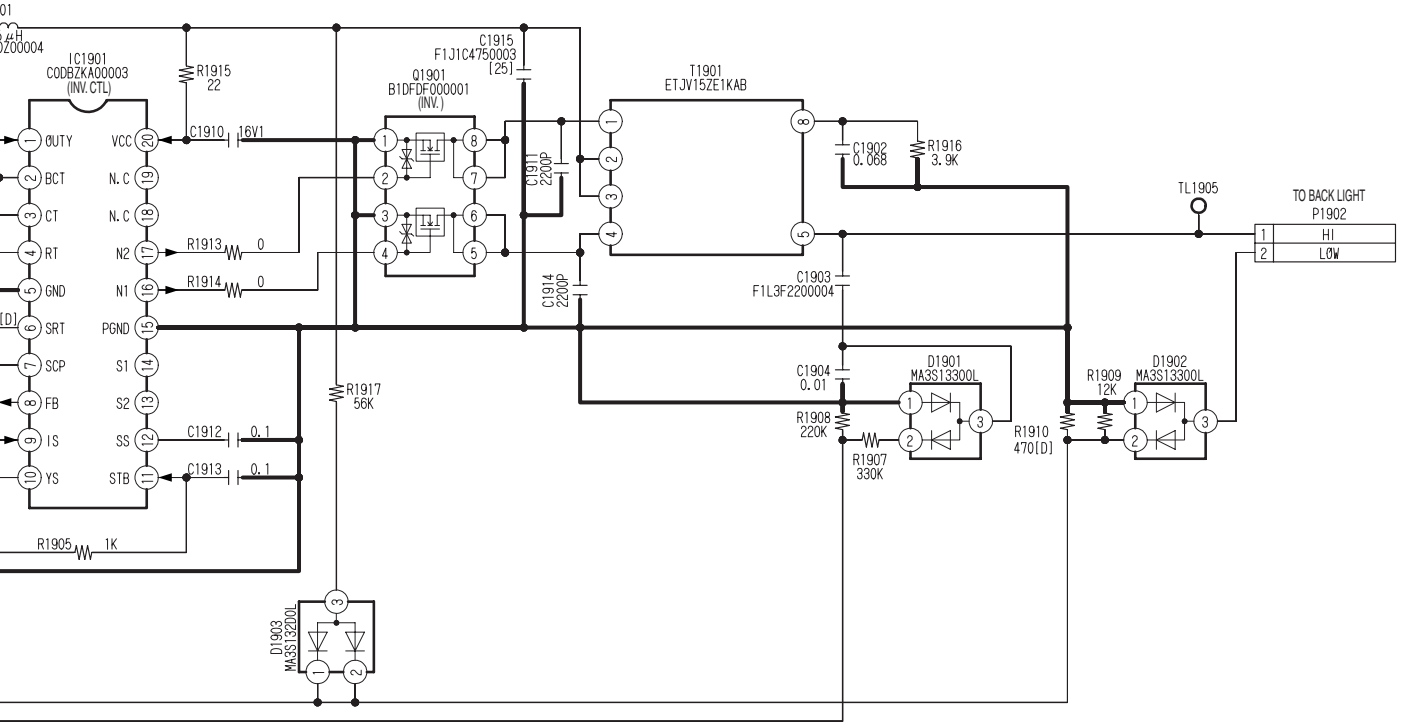
DVD-LS91PP
OPERATION P.C.B.
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11

16.12. INVERTER SECTION SCHEMATIC DIAGARAM



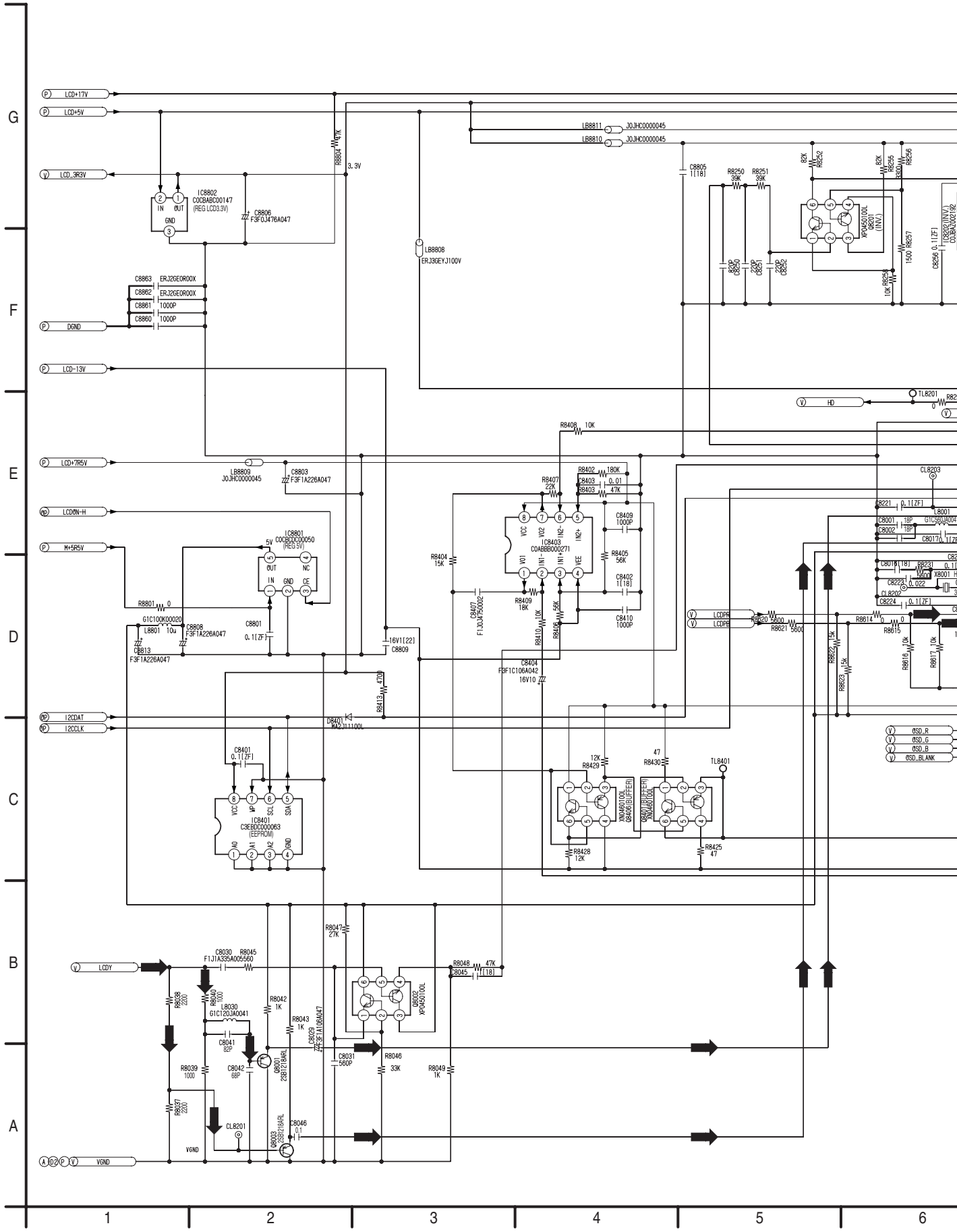
VIDEO SIGNAL

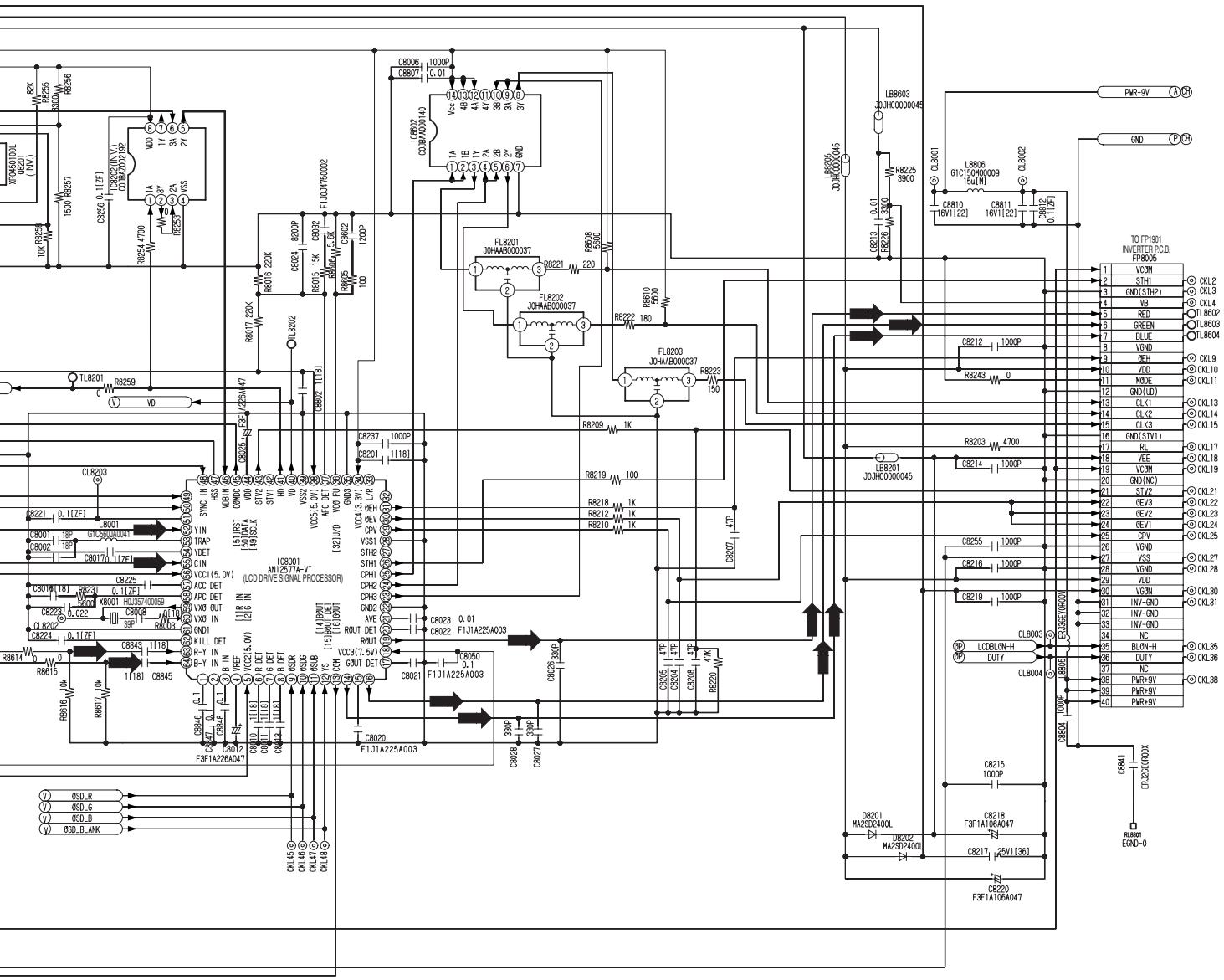


DVD-LS91PP
INVERTER P.C.B.
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11

16.9. LCD IF SECTION (MAIN P.C.B. (9/10)) SCHEMATIC DIAGRAM





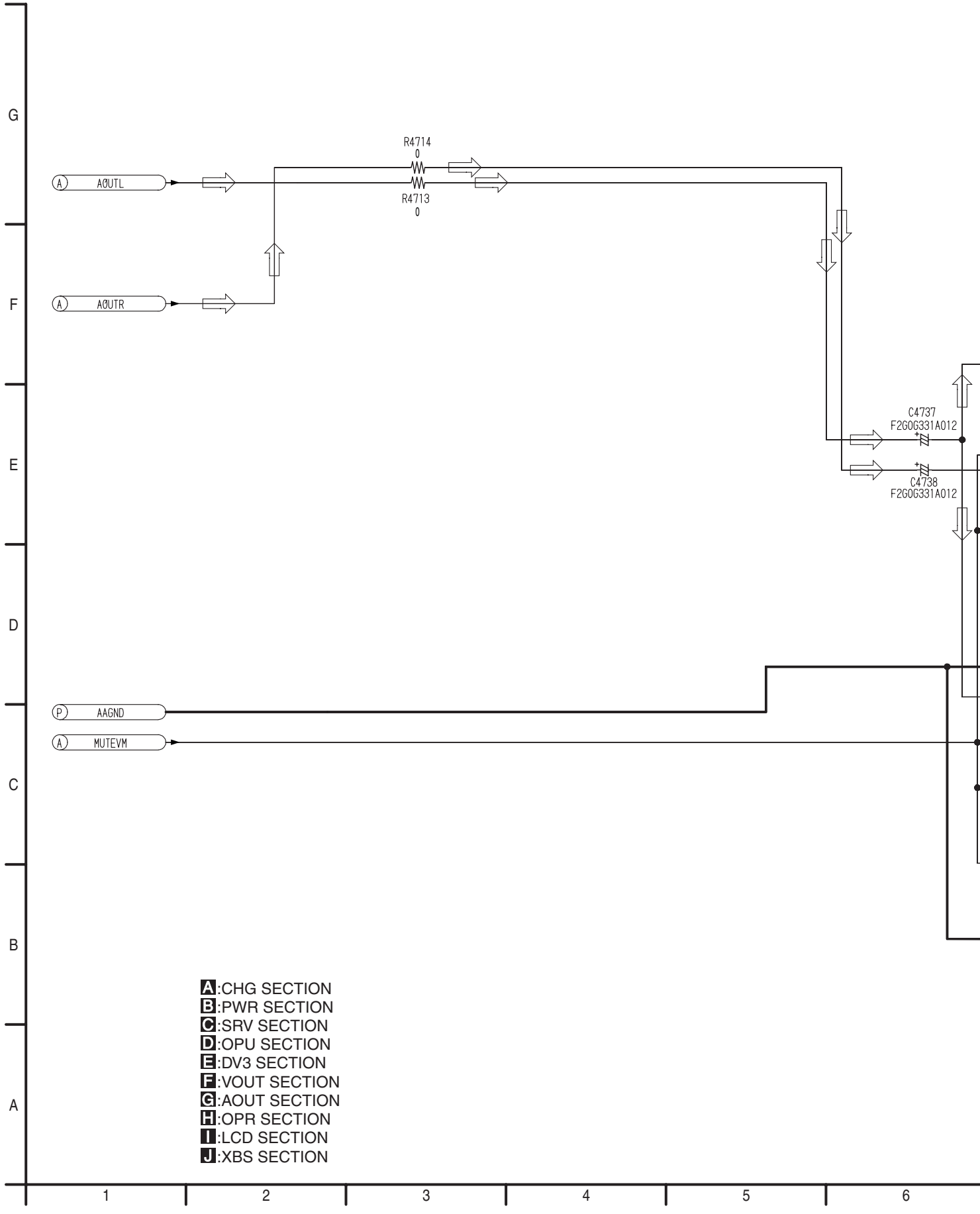
A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION

VIDEO SIGNAL

DVD-LS91PP
LCD IF SECTION
(MAIN P.C.B.(9/10))
SCHEMATIC DIAGRAM

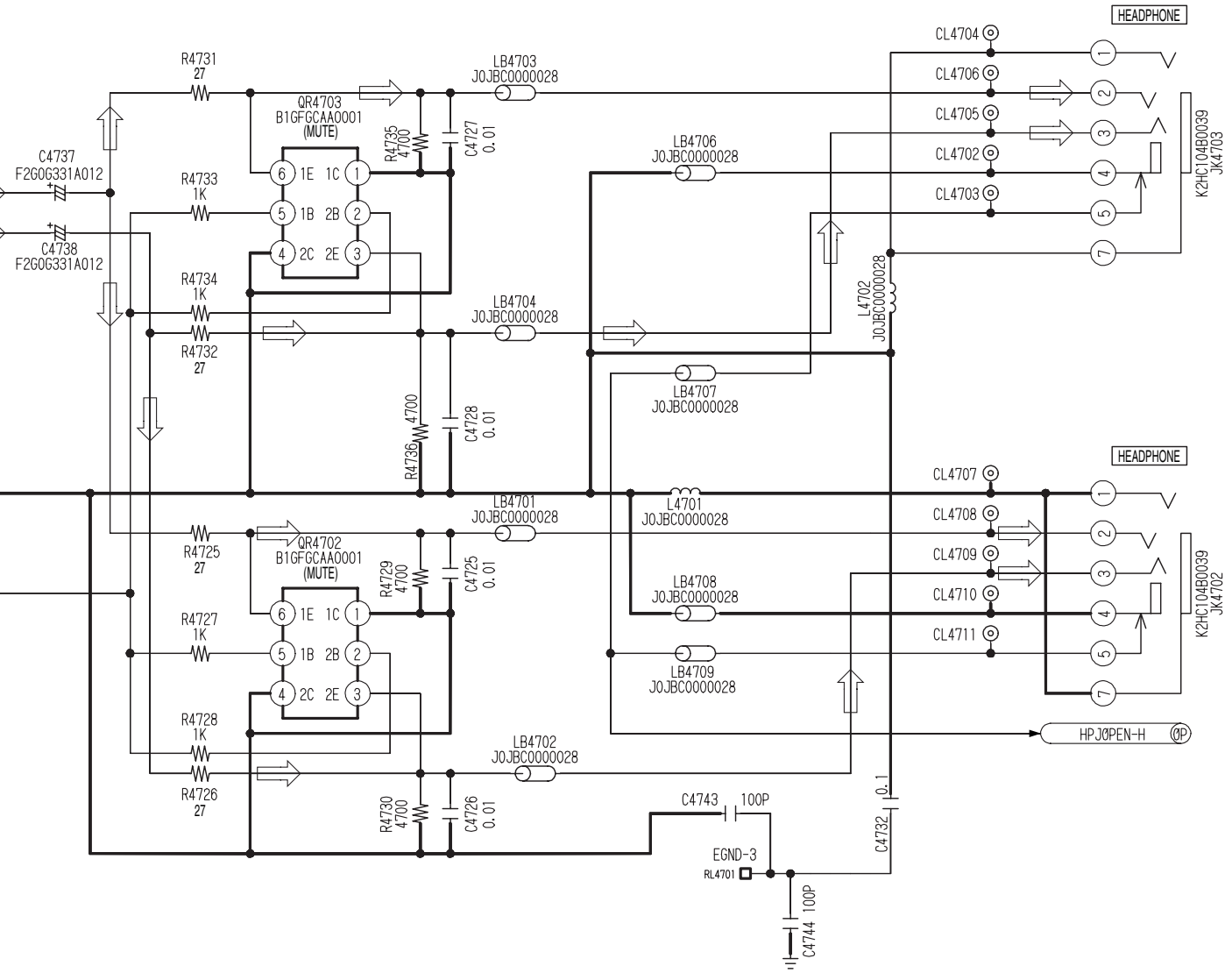
6 | 7 | 8 | 9 | 10 | 11

16.10. XBS SECTION (MAIN P.C.B. (10/10)) SCHEMATIC DIAGRAM



J

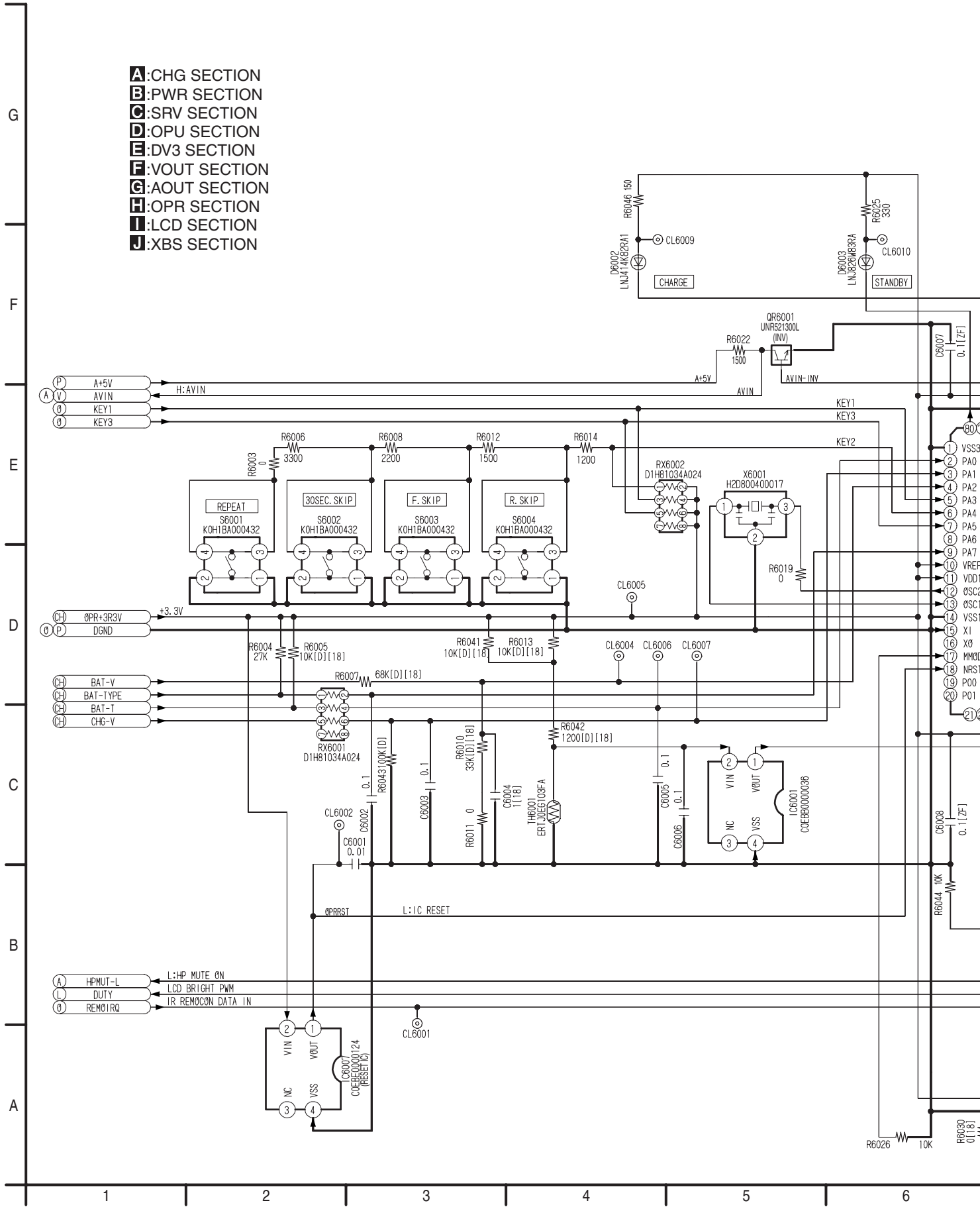
AUDIO SIGNAL

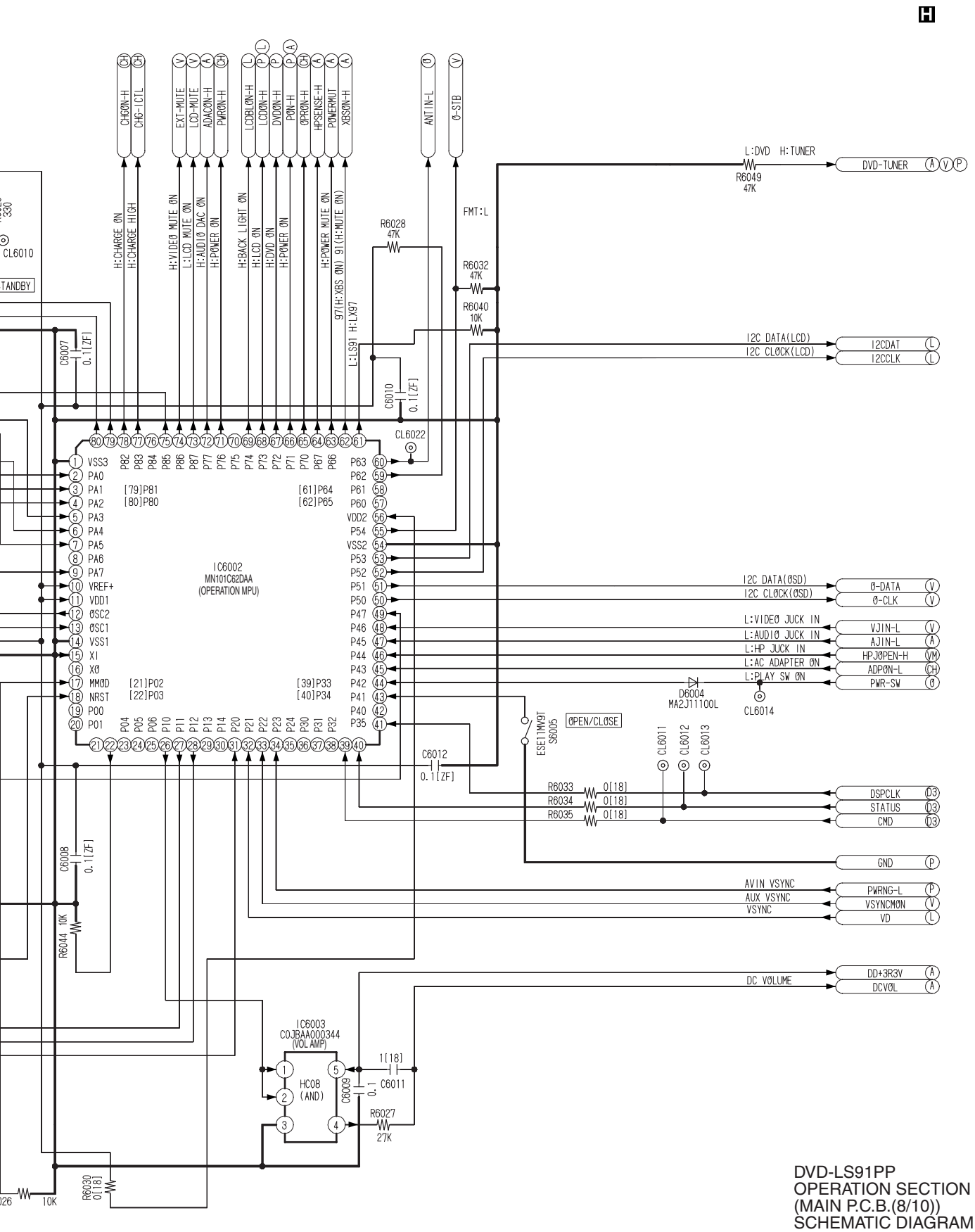


DVD-LS91PP
XBS SECTION
(MAIN P.C.B.(10/10))
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11

16.8. OPERATION SECTION (MAIN P.C.B. (8/10)) SCHEMATIC DIAGRAM

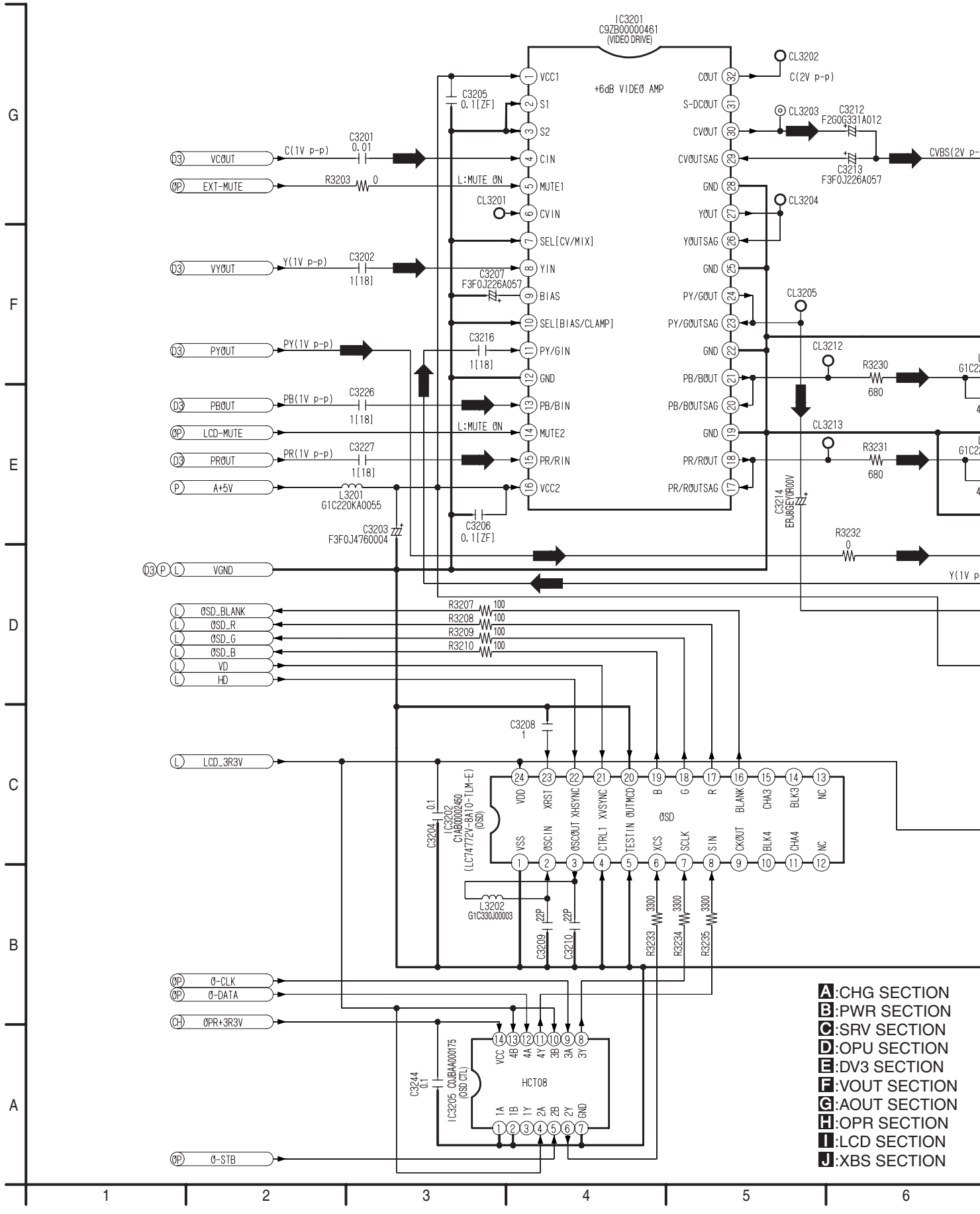




DVD-LS91PP
OPERATION SECTION
(MAIN P.C.B.(8/10))
SCHEMATIC DIAGRAM

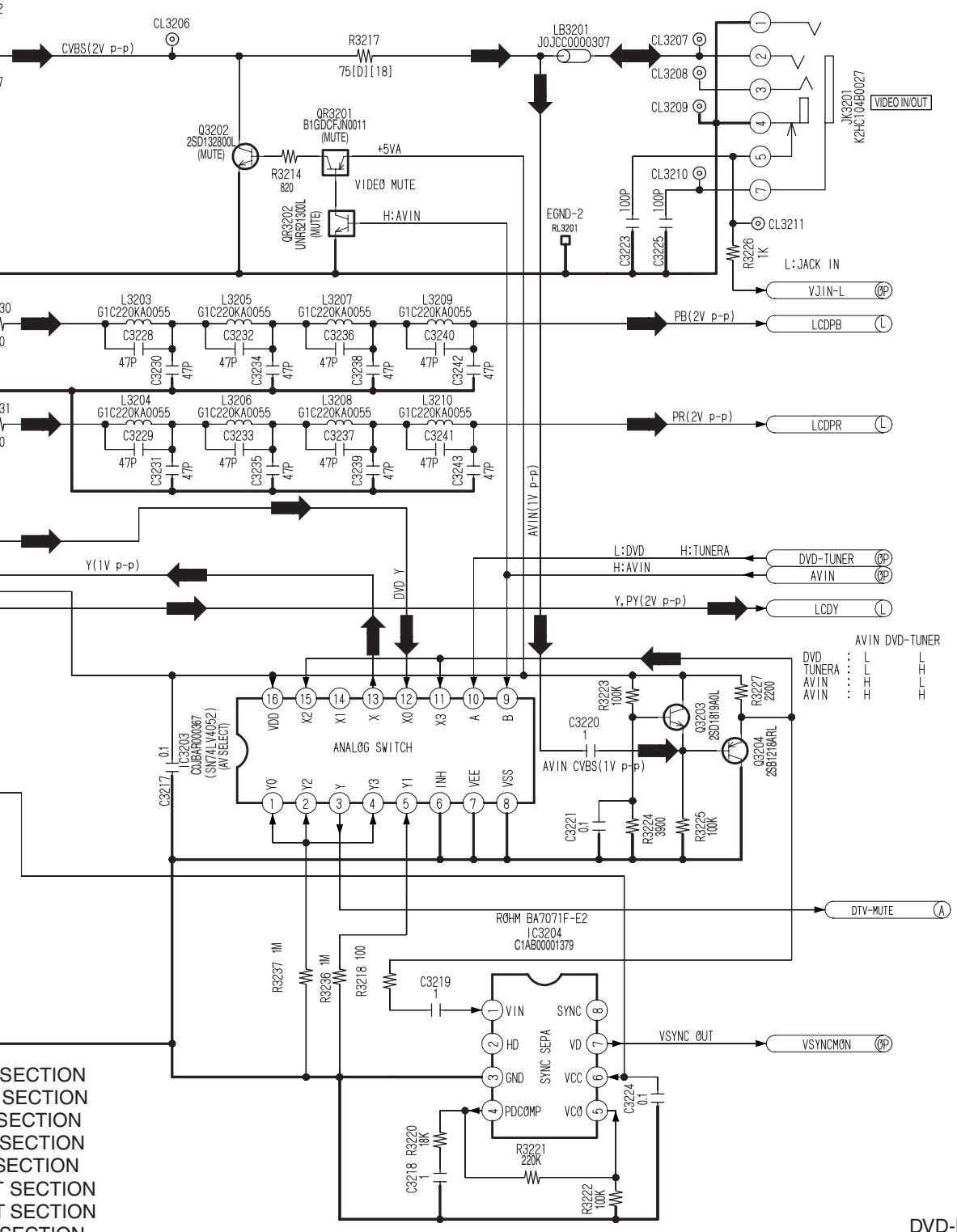
6 | 7 | 8 | 9 | 10 | 11

16.6. VIDEO OUT SECTION (MAIN P.C.B. (6/10)) SCHEMATIC DIAGRAM



F

VIDEO SIGNAL

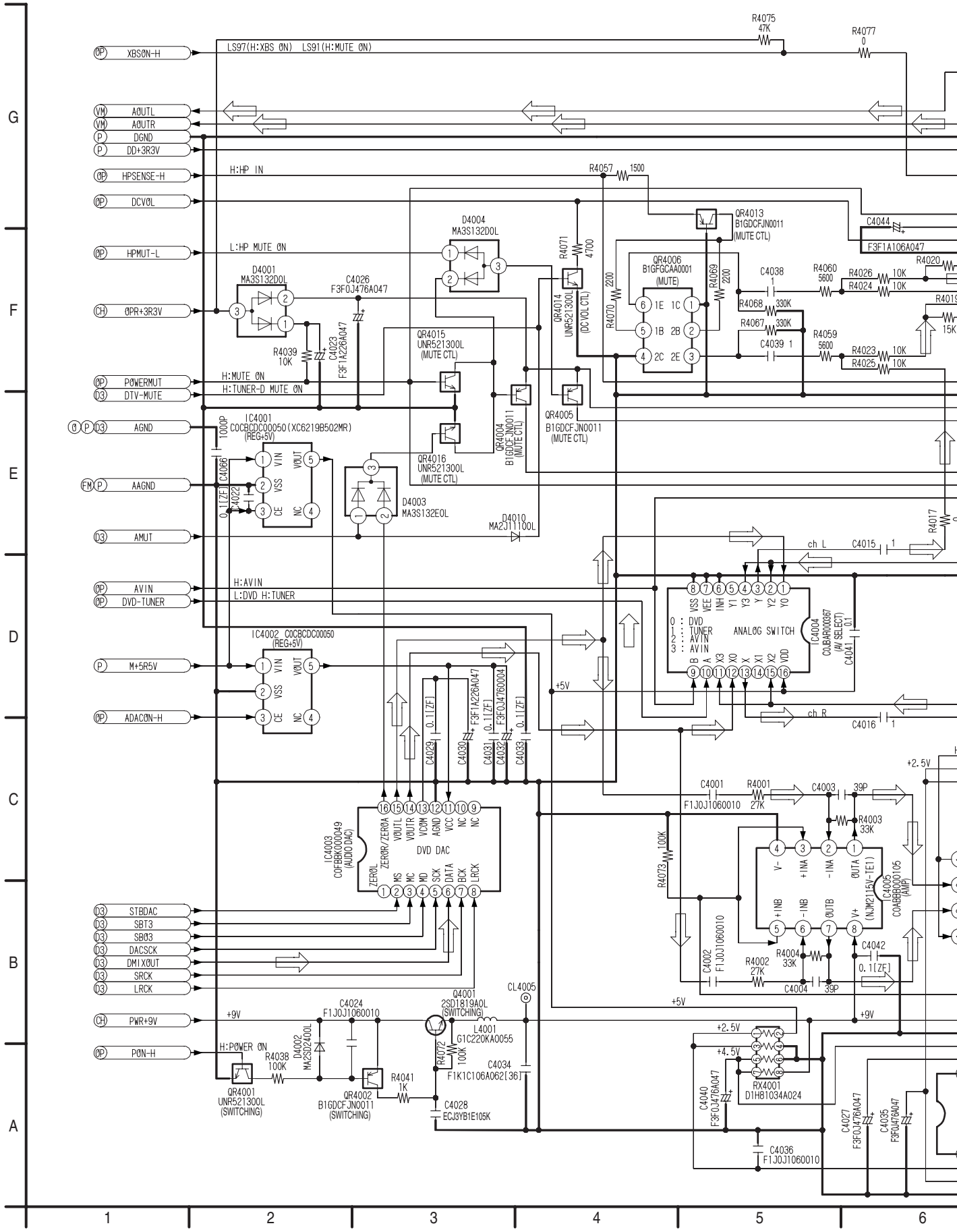


SECTION
SECTION
SECTION
SECTION
SECTION
T SECTION
T SECTION
SECTION
SECTION
SECTION

DVD-LS91PP
VIDEO OUT SECTION
(MAIN P.C.B.(6/10))
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11

16.7. AUDIO OUT SECTION (MAIN P.C.B. (7/10)) SCHEMATIC DIAGRAM


XBSØN-H
LS97(H:XBS ØN) LS91(H:MUTE ØN)
AØUTL
AØUTR
DGND
DD+3R3V
HPSENSE-H
DCVØL
HPMUT-L
ØPR+3R3V
PØWERMUT
DTV-MUTE
AGND
AAGND
AMUT
AVIN
DVD-TUNER
M+5R5V
ADACØN-H
STBDAC
SBT3
SBØ3
DACSCK
DMIXOUT
SRCK
LRCK
PWR+9V
PØN-H
H:HP IN
L:HP MUTE ØN
H:MUTE ØN
H:TUNER-D MUTE ØN
H:AVIN
L:DVD H:TUNER
H:PØWER ØN
IC4001 C0CBCDC00050(XC6219B502MR) (REG+5V)
IC4002 C0CBCDC00050 (REG+5V)
IC4003 C0FBRK000049 (AUDIO DAC)
DVD DAC
IC4004 C0JBAP00067 (AV SELECT)
ANALØG SWITCH
0 : DVD
1 : TUNER
2 : AVIN
3 : AVIN
ch L
ch R
C4015
C4016
C4001
C4002
C4003
C4004
C4005 C0ABEB000105 (AMP)
C4042
R4001
R4002
R4003
R4004
R4017
R4057
R4071
R4072
R4073
R4075
R4077
C4022
C4023
C4024
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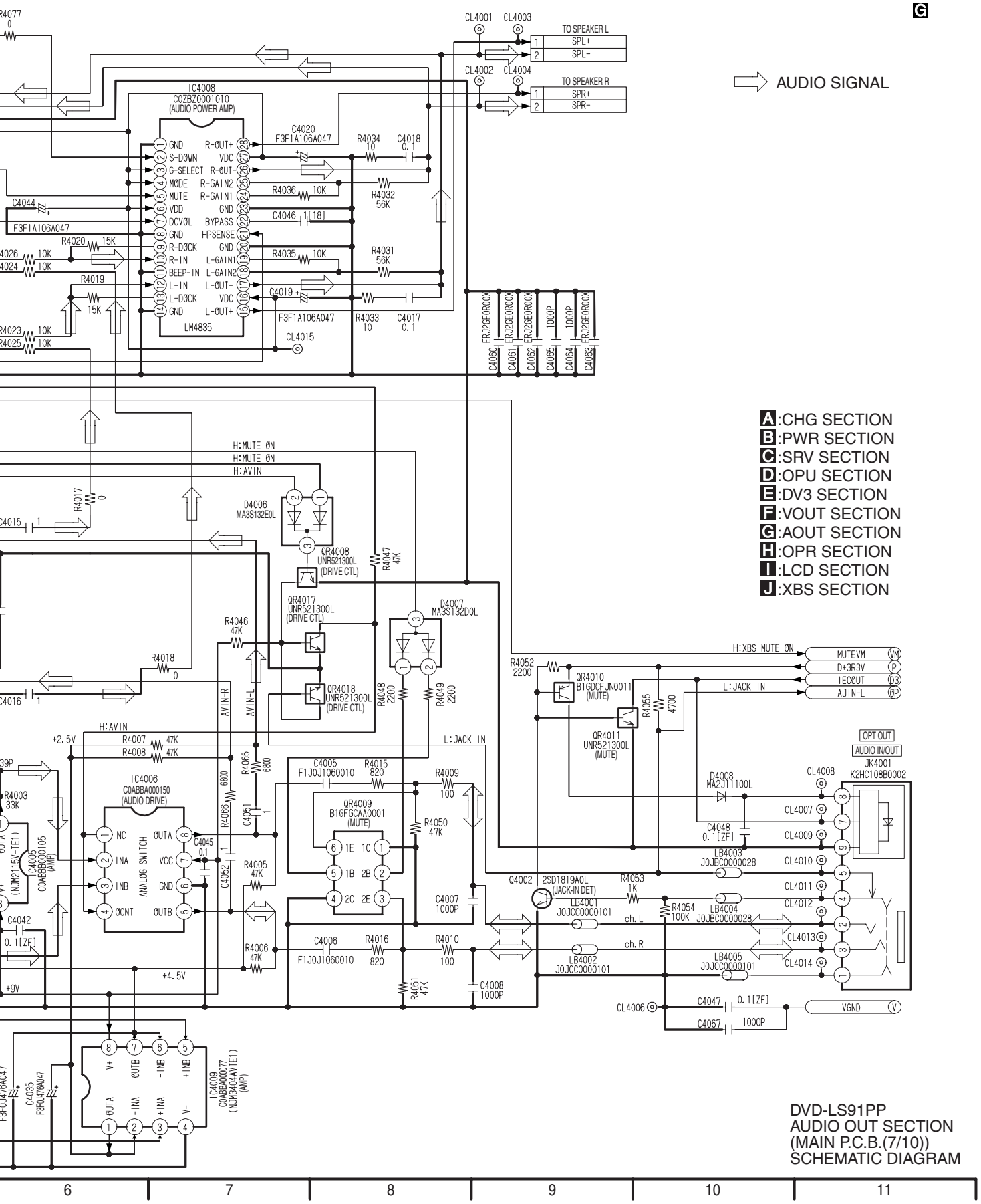
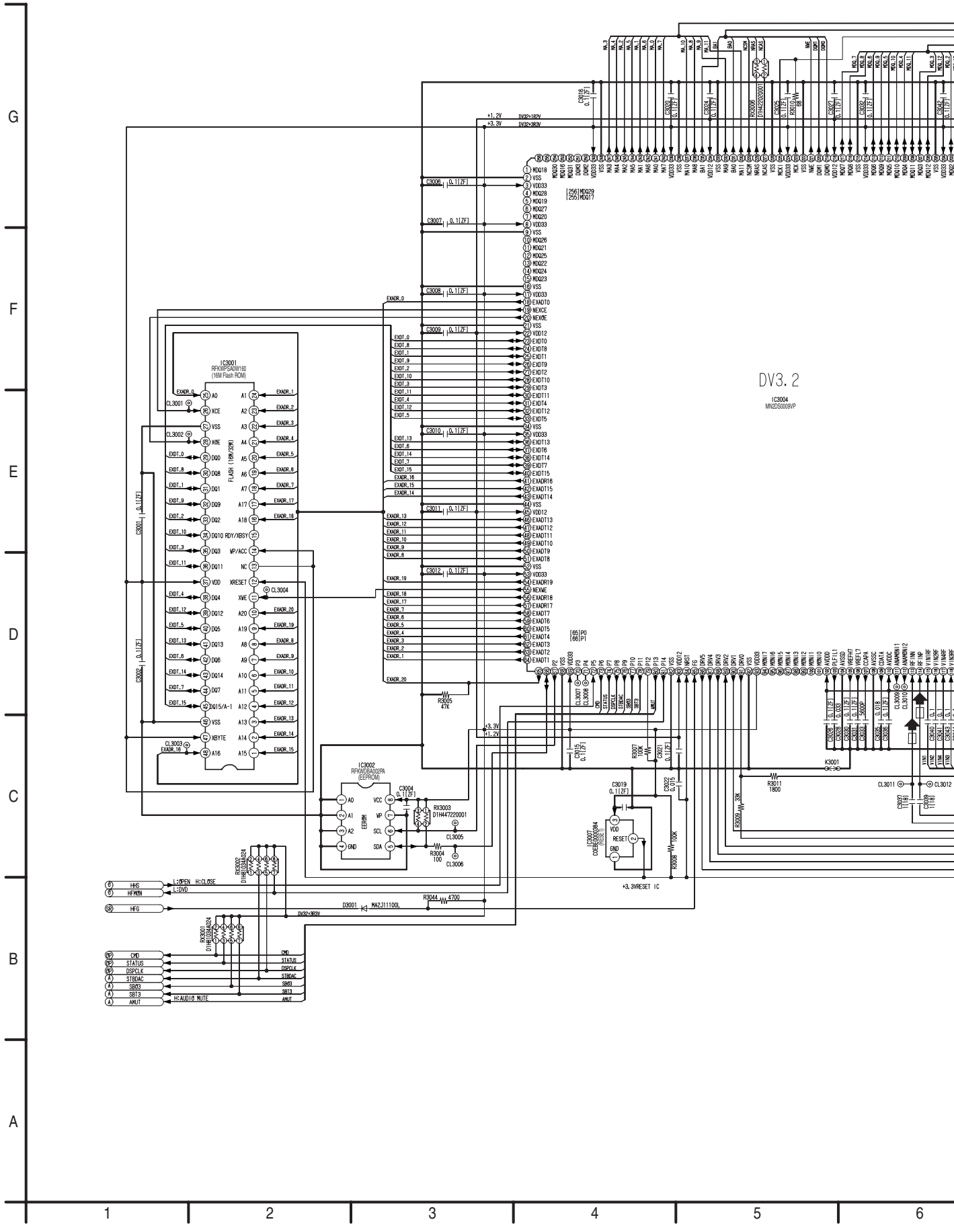
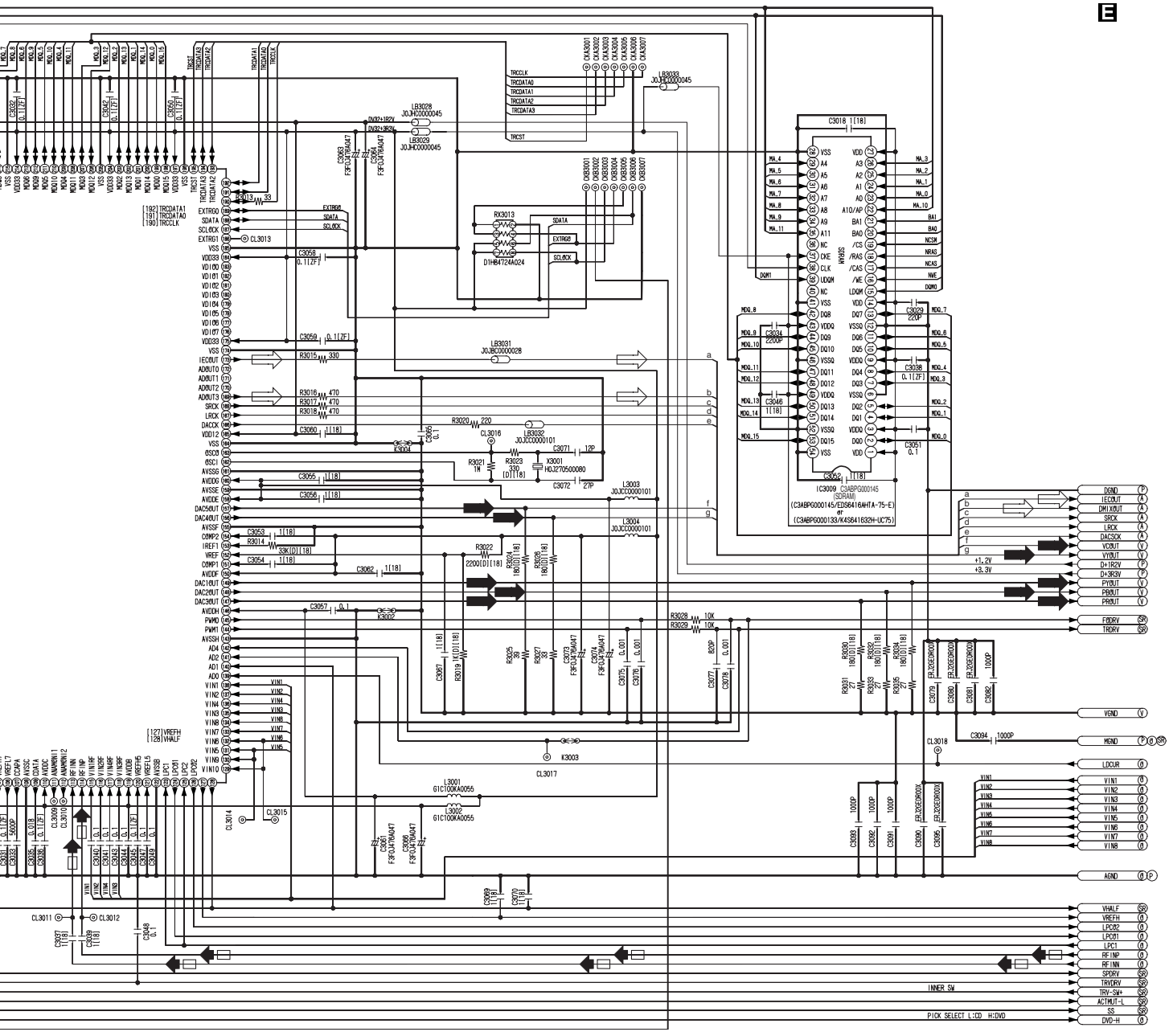
C4082
C4083



DVD-LS91PP
AUDIO OUT SECTION
(MAIN P.C.B.(7/10))
SCHEMATIC DIAGRAM

16.5. DV3 SECTION (MAIN P.C.B. (5/10)) SCHEMATIC DIAGRAM





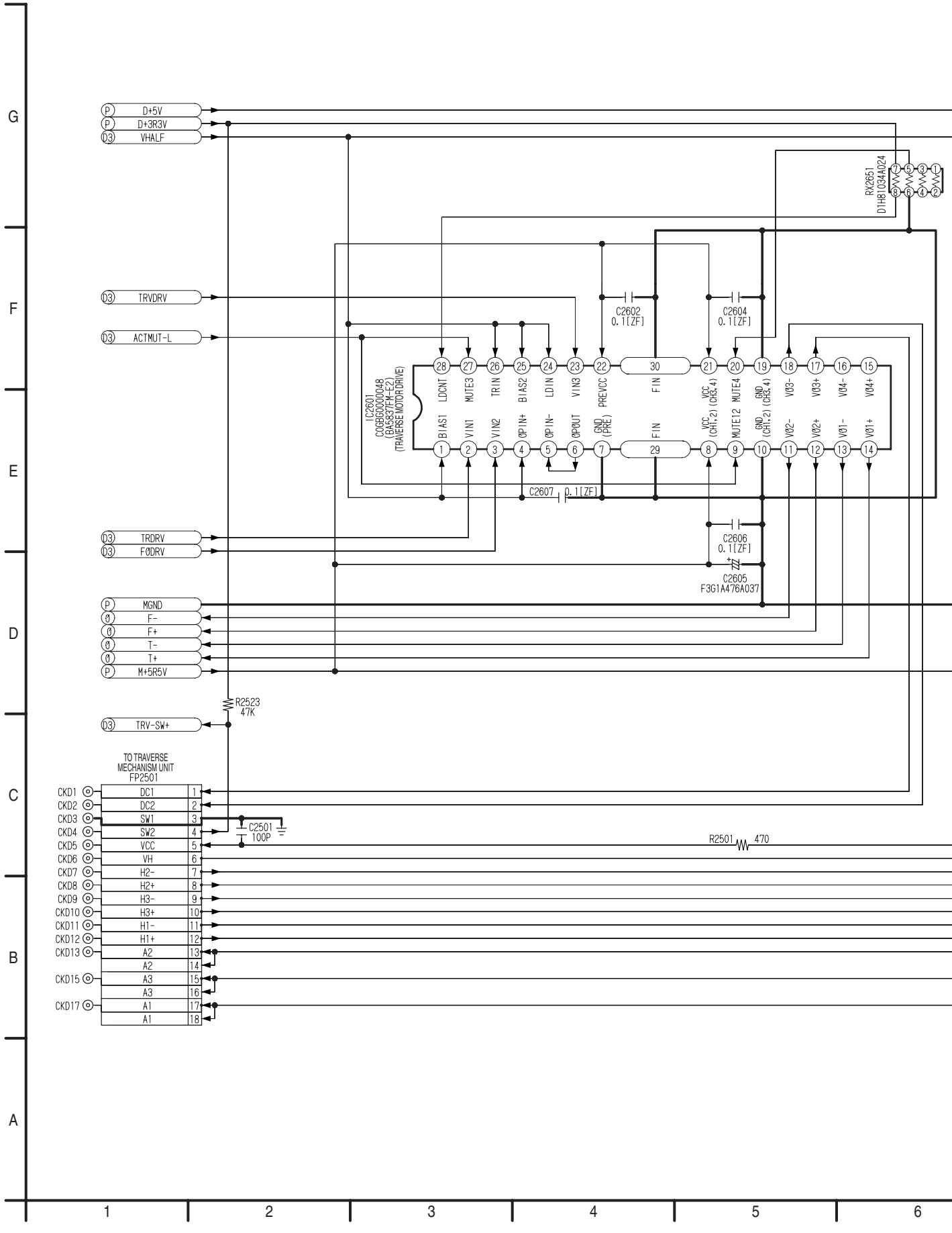
A :CHG SECTION
B :PWR SECTION
C :SRV SECTION
D :OPU SECTION
E :DV3 SECTION
F :VOUT SECTION
G :AOUT SECTION
H :OPR SECTION
I :LCD SECTION
J :XBS SECTION

VIDEO SIGNAL
AUDIO SIGNAL
RF SIGNAL

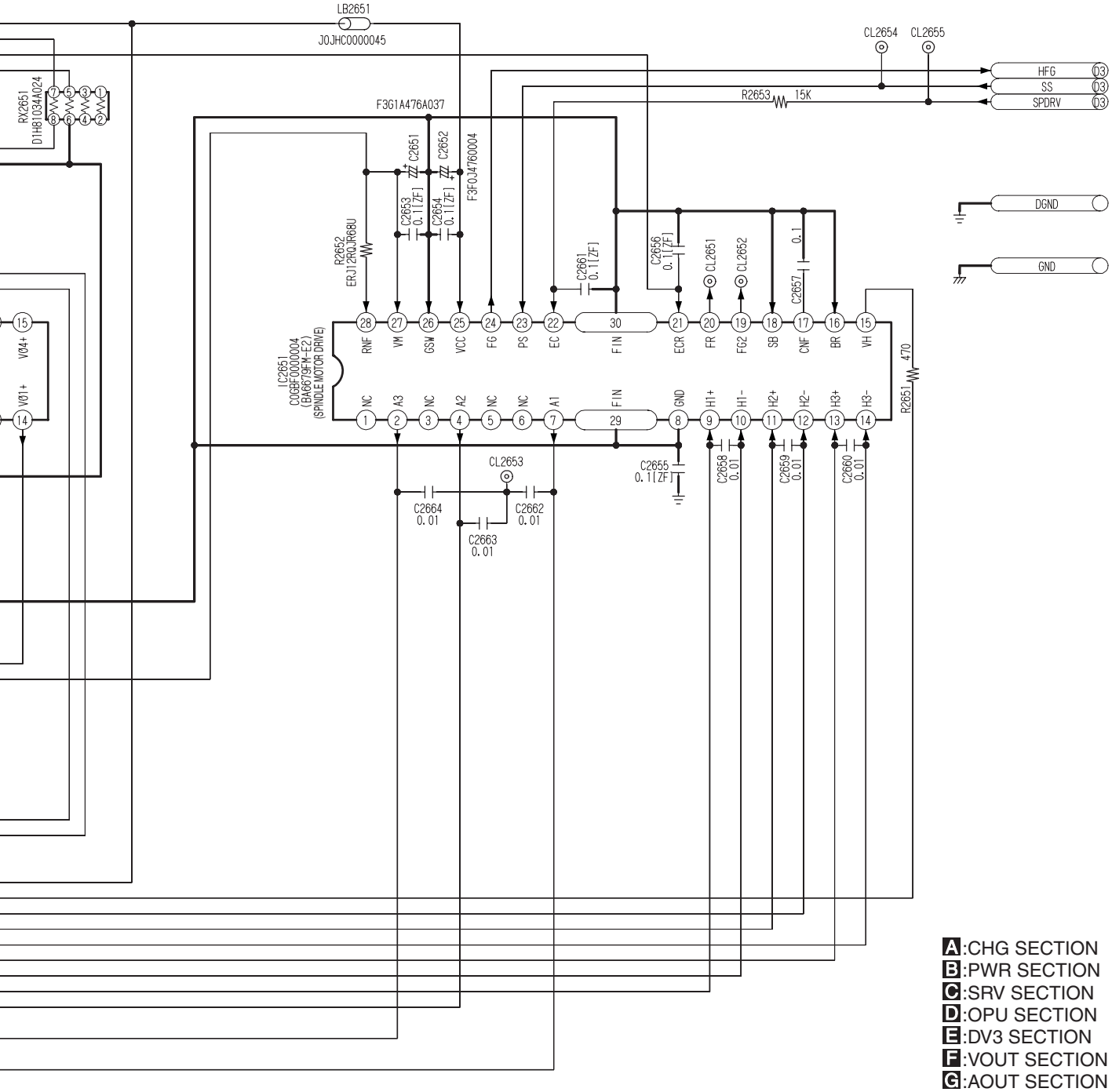
DVD-LS91PP
DV3 SECTION (MAIN P.C.B.(5/10)) SCHEMATIC DIAGRAM

6	7	8	9	10	11

16.3. SERVO SECTION (MAIN P.C.B. (3/10)) SCHEMATIC DIAGRAM



C

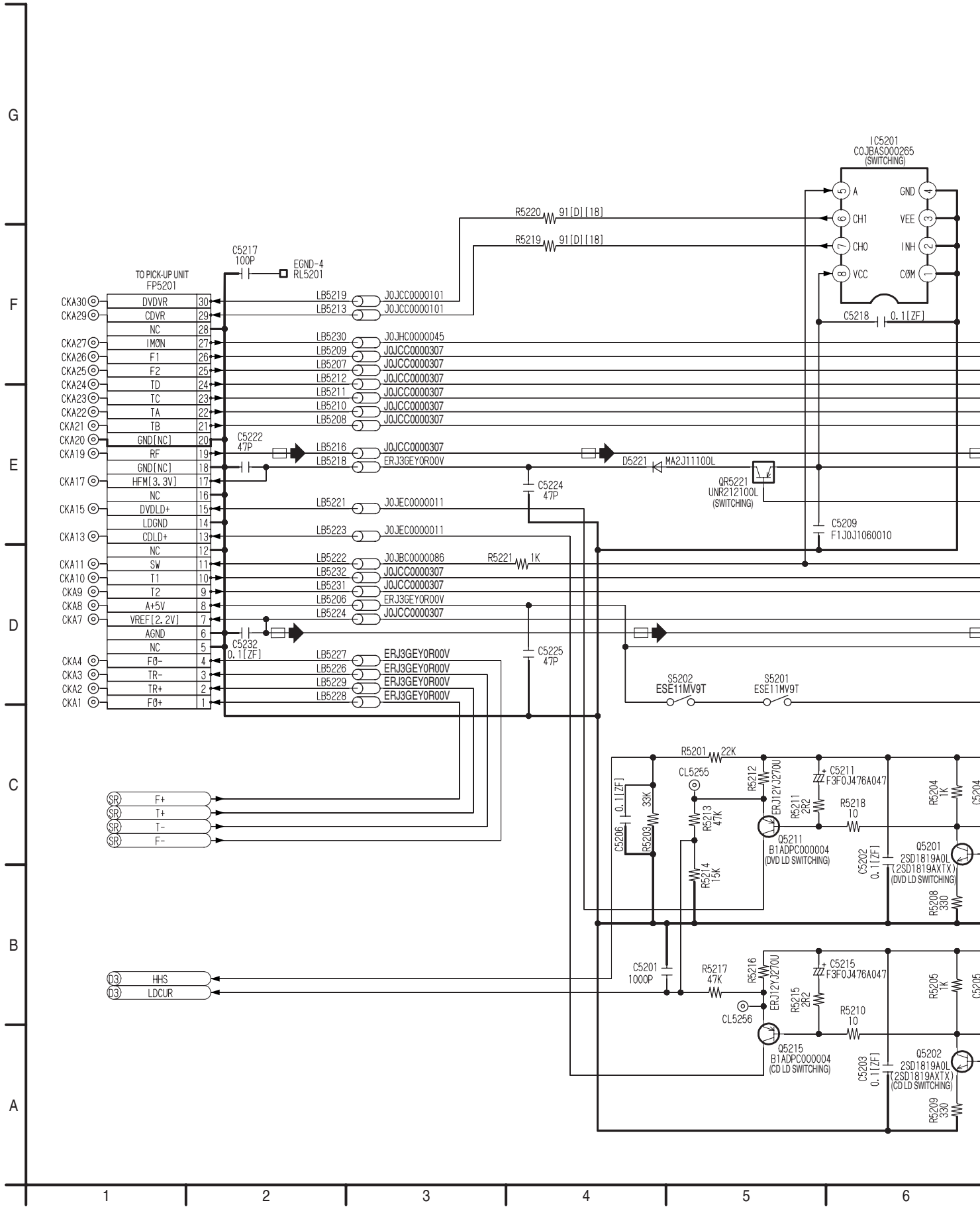


A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION

DVD-LS91PP
SERVO SECTION
(MAIN P.C.B.(3/10))
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11

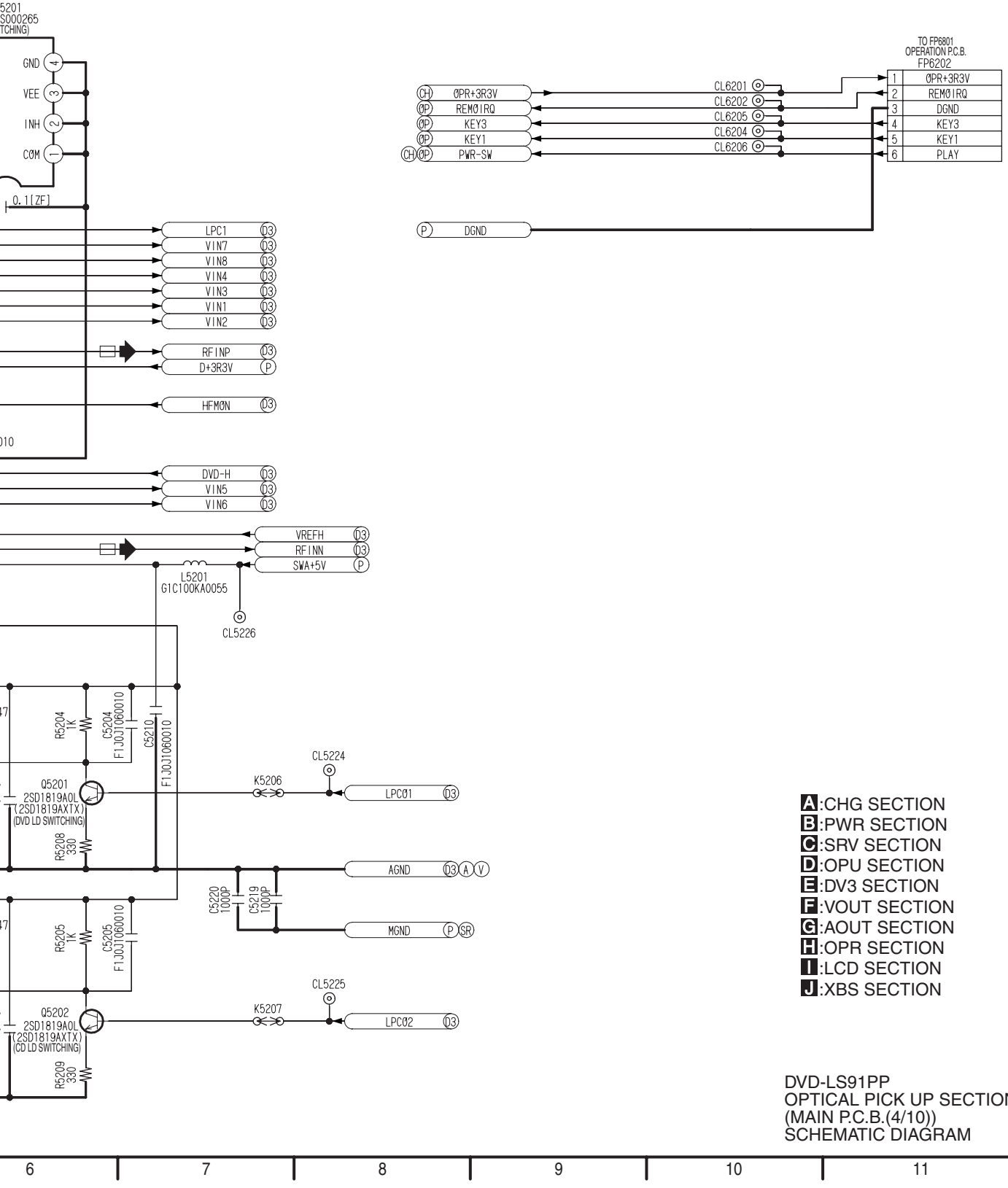
16.4. OPTICAL PICK UP SECTION (MAIN P.C.B. (4/10)) SCHEMATIC DIAGRAM



D

RF SIGNAL

AUDIO SIGNAL



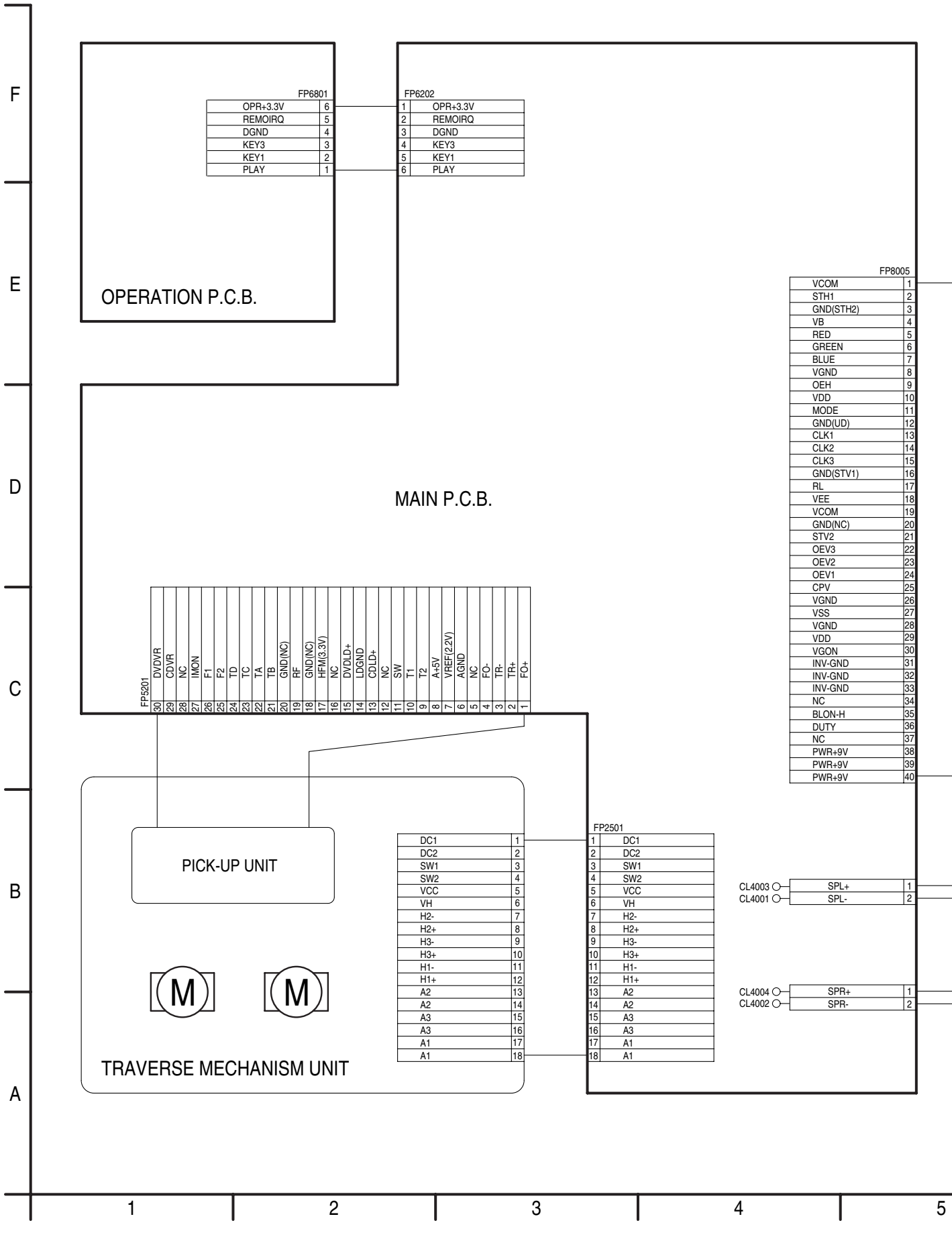
A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION

DVD-LS91PP
OPTICAL PICK UP SECTION
(MAIN P.C.B.(4/10))
SCHEMATIC DIAGRAM

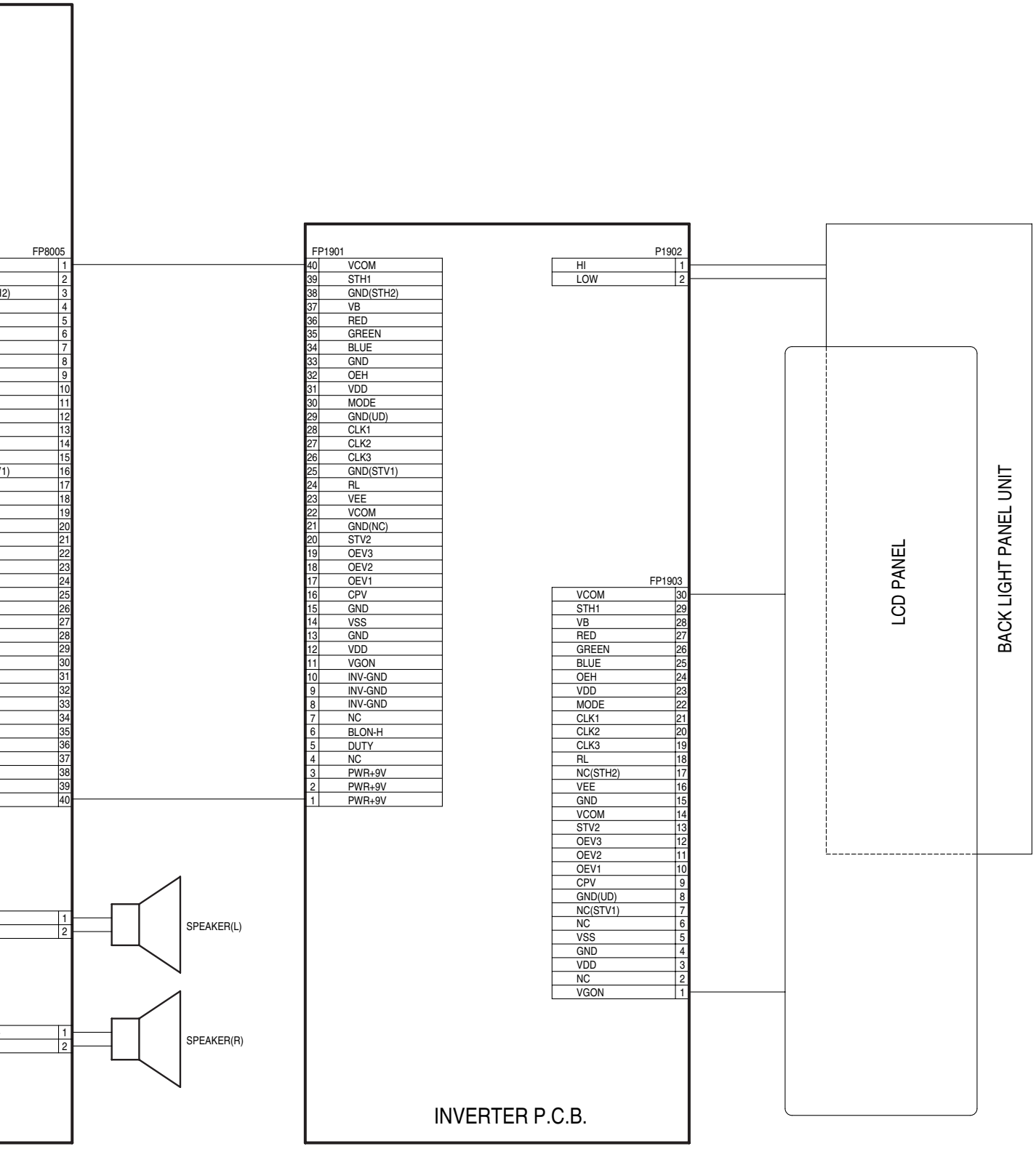
6 | 7 | 8 | 9 | 10 | 11

15 INTERCONNECTION SCHEMATIC DIAGRAM & SCHEMATIC D

15.1. INTERCONNECTION SCHEMATIC DIAGRAM



MATIC DIAGRAM NOTES



DVD-LS91PP
INTERCONNECTION
SCHEMATIC DIAGRAM

5 | 6 | 7 | 8 | 9

15.2. SCHEMATIC DIAGRAM NOTES

This schematic diagram may be modified at any time with the development of new technology.

Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.

Furthermore, special parts which have purpose of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture´s specified parts shown in theparts list.

Important safety notice:

There are special components used in this equipment which are important for safety.

These parts are marked by ⚠ in the schematic diagrams. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

Cover the parts boxes made of plastics with aluminum foil.

Ground the soldering iron.

Put a conductive mat on the work table.

Do not touch the legs of IC or LSI with the fingers directly.

CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE **F1, F3, F4 8A 125V FUSE, F5 1.6A 125V FUSE. F6 4A 125V FUSE.**

RISK OF FIRE-REPLACE FUSE AS MARKED.

FUSE CAUTION

These symbols located near the fuse indicates that the fuse used is a fast operating type. For continued protection against fire harzard, replace with the same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

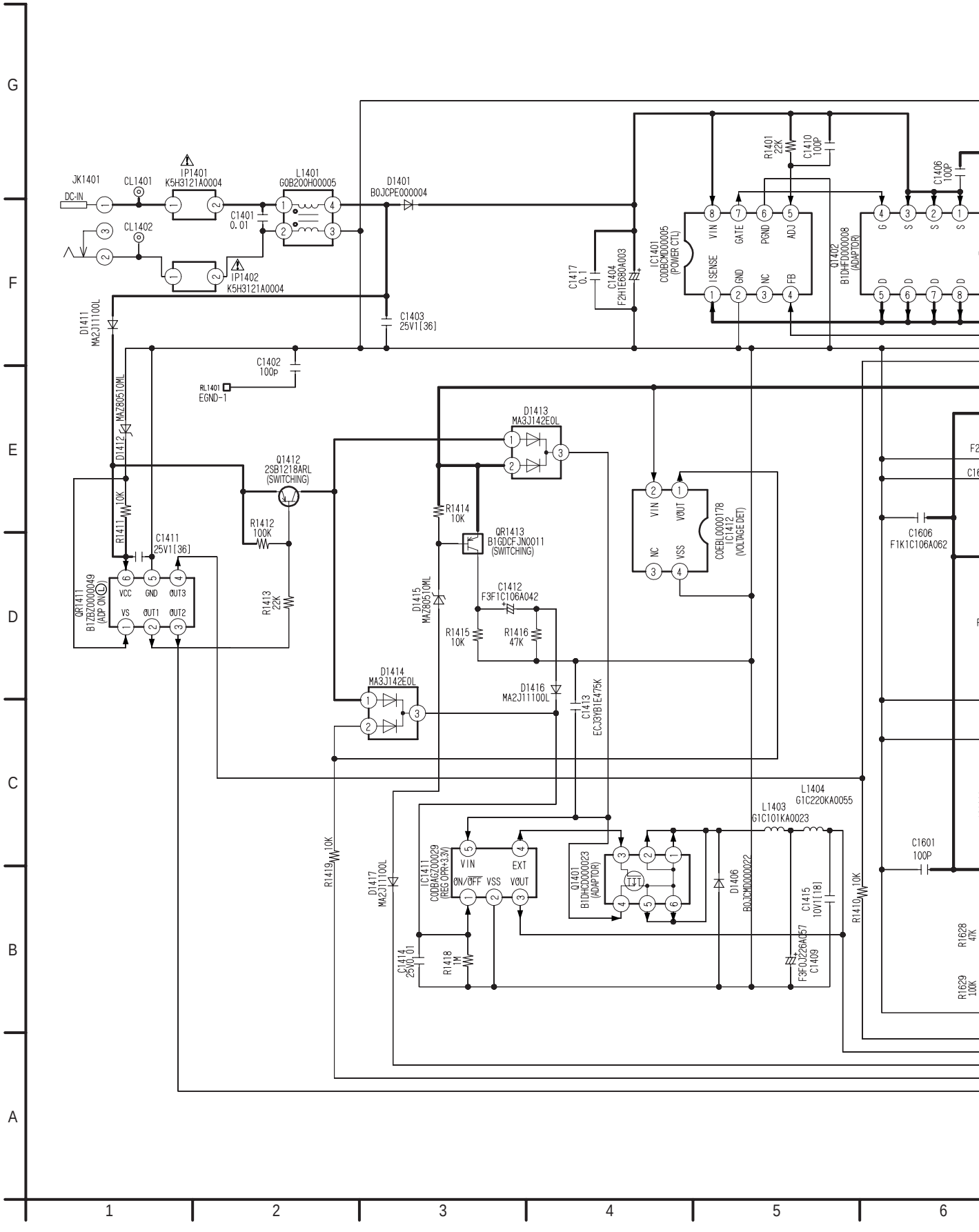
Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n' utiliser que des fusibles de même type. Ce dernier est indiqué là qù le présent symbole est apposé.

se
in

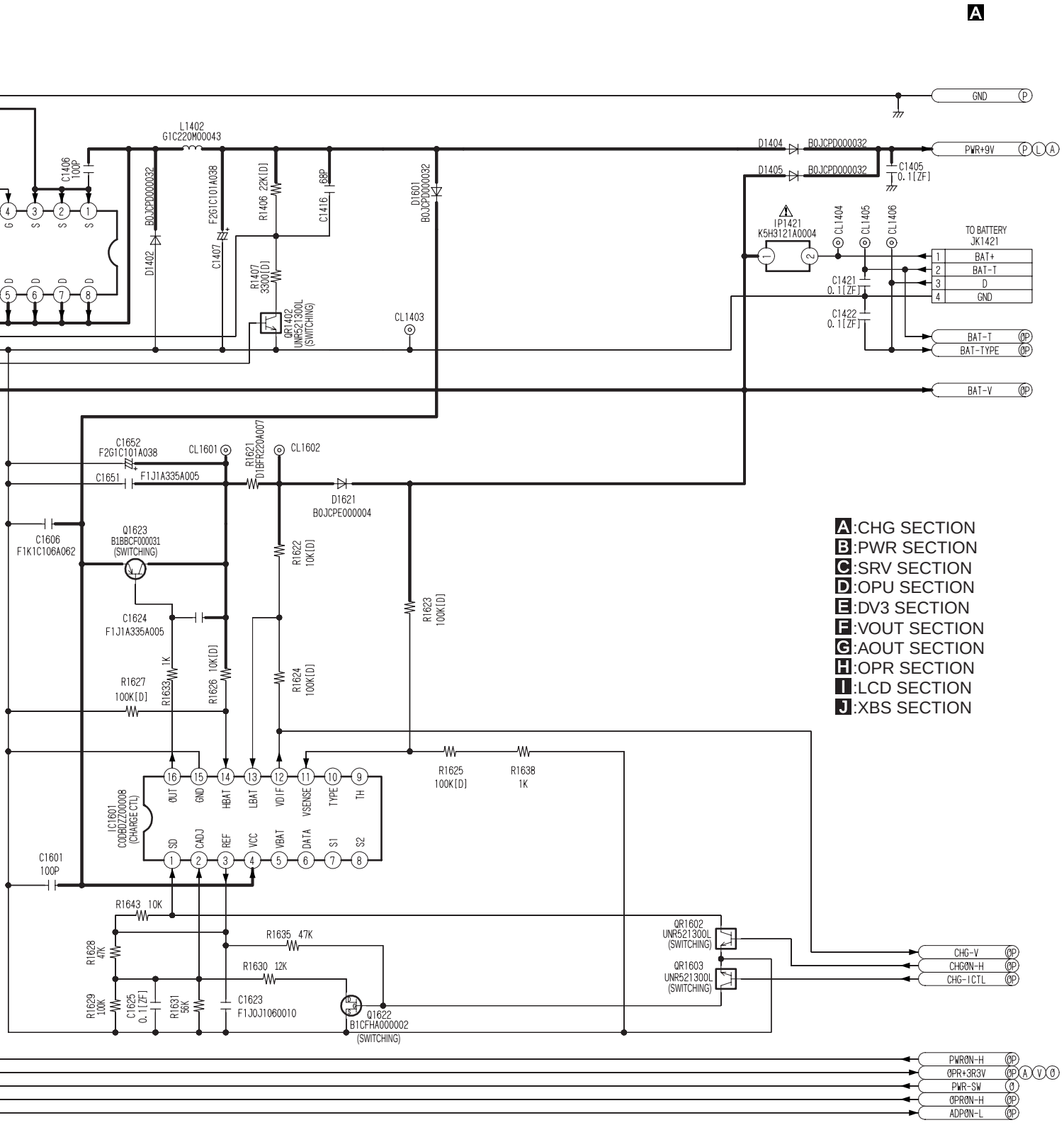
ith
of

16 SCHEMATIC DIAGRAM

16.1. CHARGE BATTERY SECTION (MAIN P.C.B. (1/10)) SCHEMATIC DIAGRAM



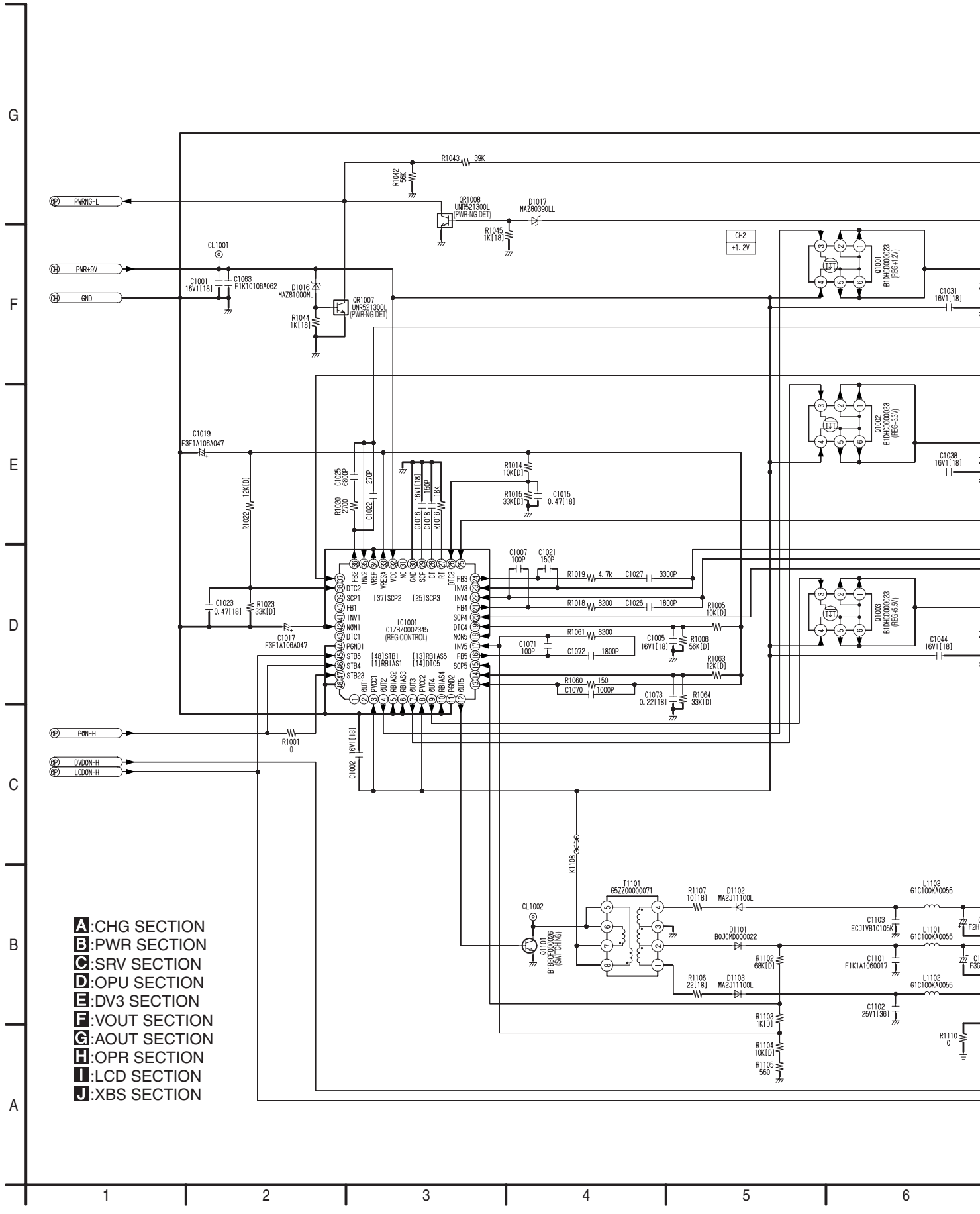
AGRAM

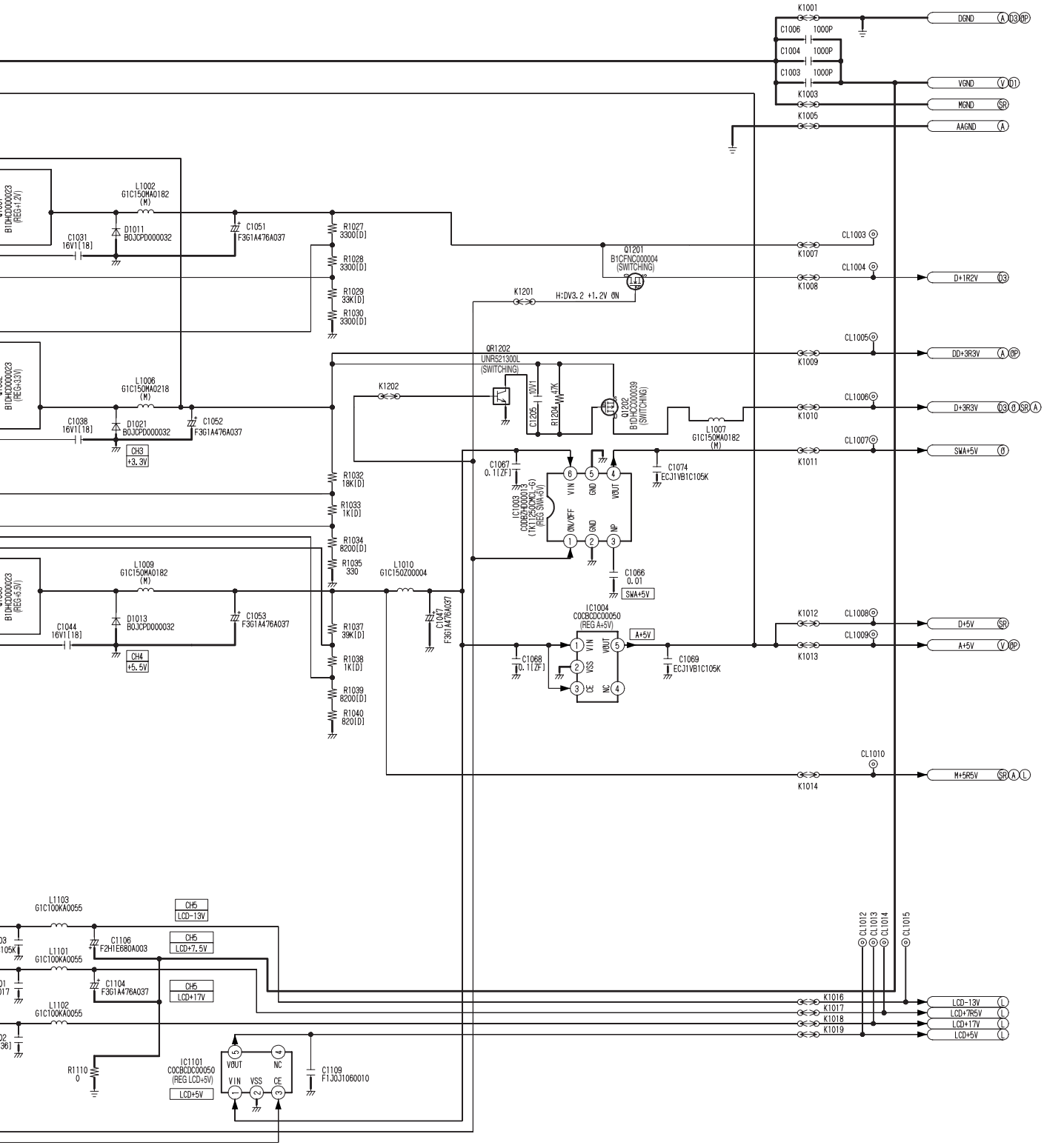


DVD-LS91PP
CHARGE BATTERY SECTION
(MAIN P.C.B.(1/10))
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11

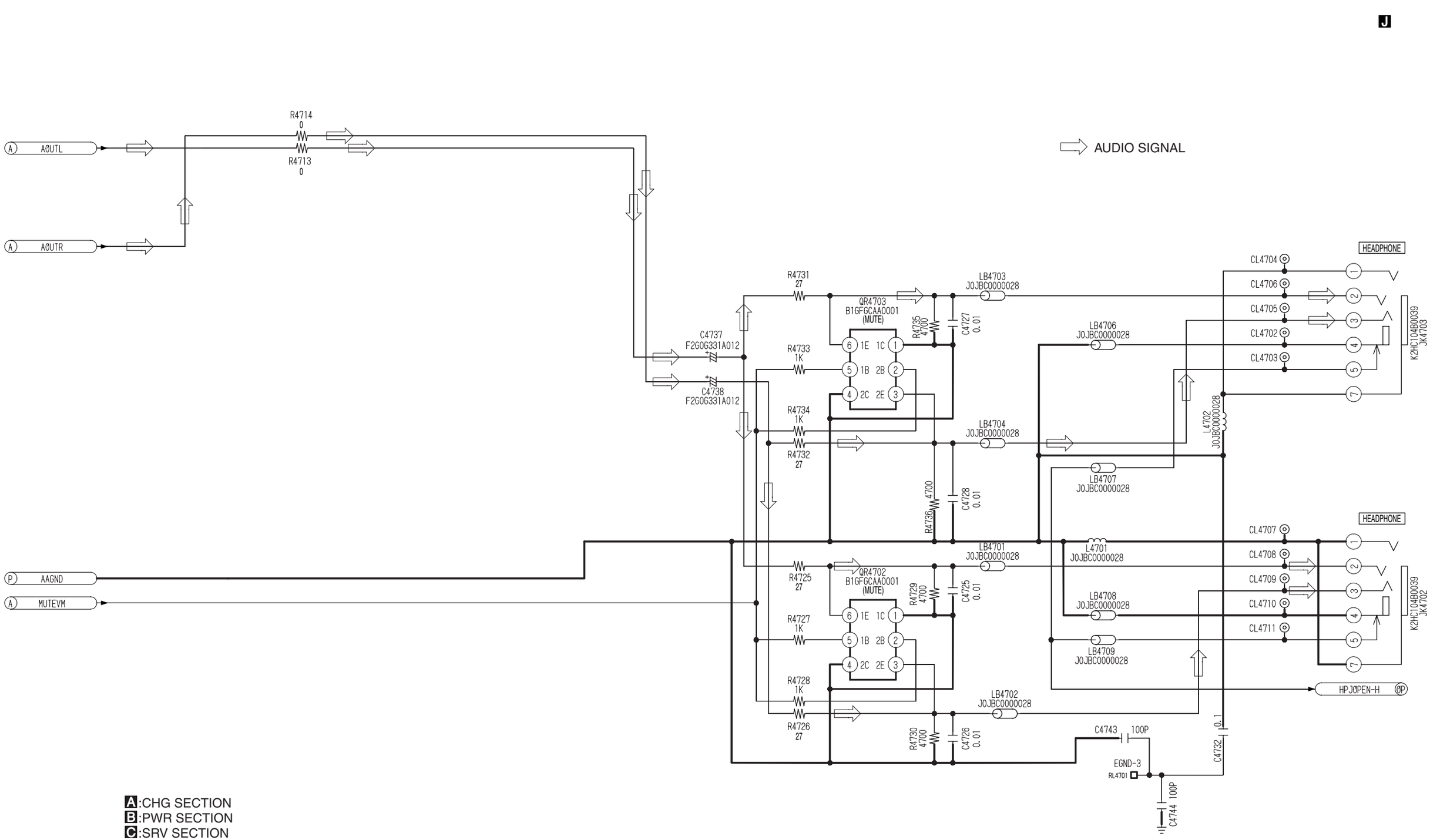
16.2. POWER SUPPLY SECTION (MAIN P.C.B. (2/10)) SCHEMATIC DIAGRAM

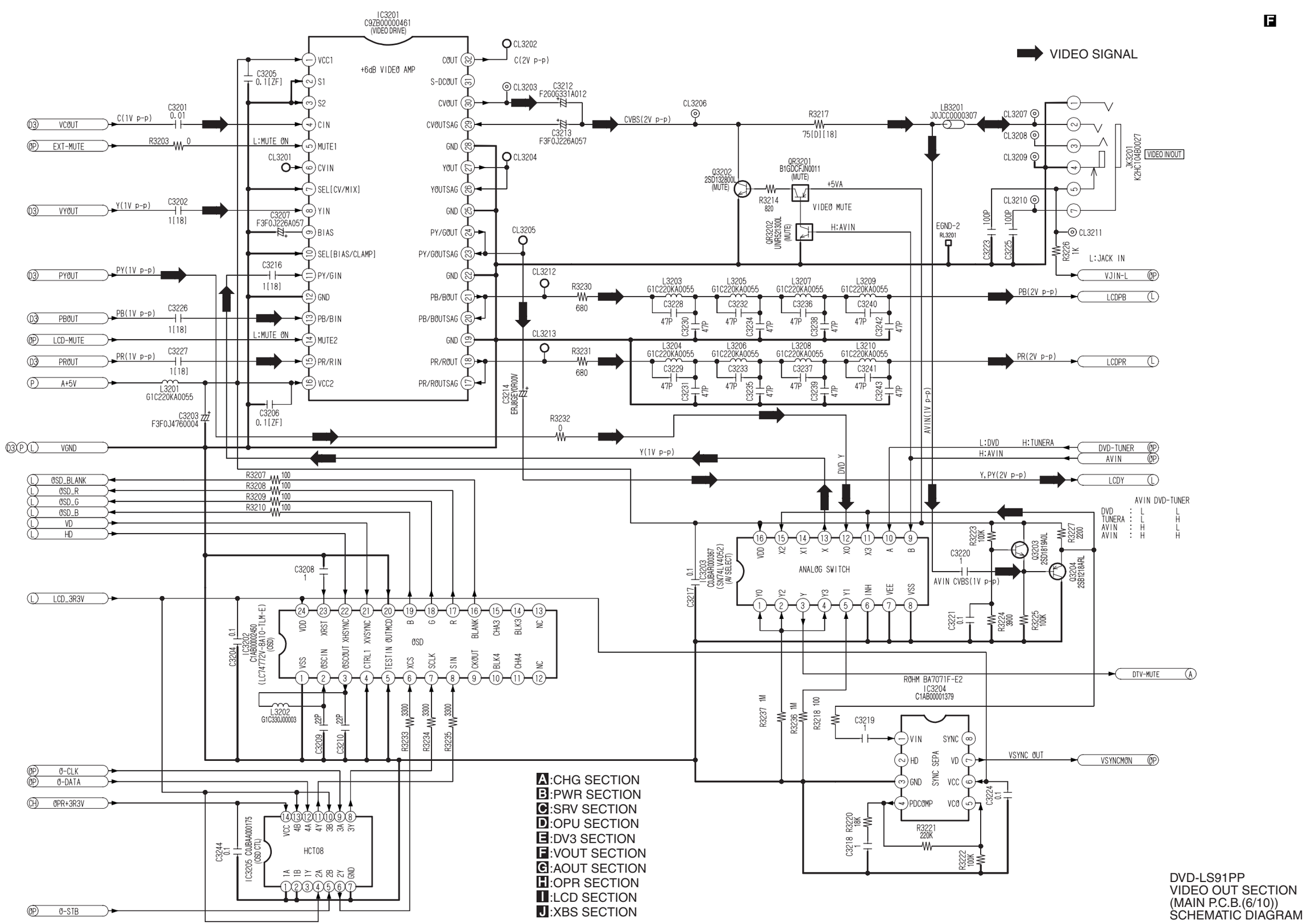




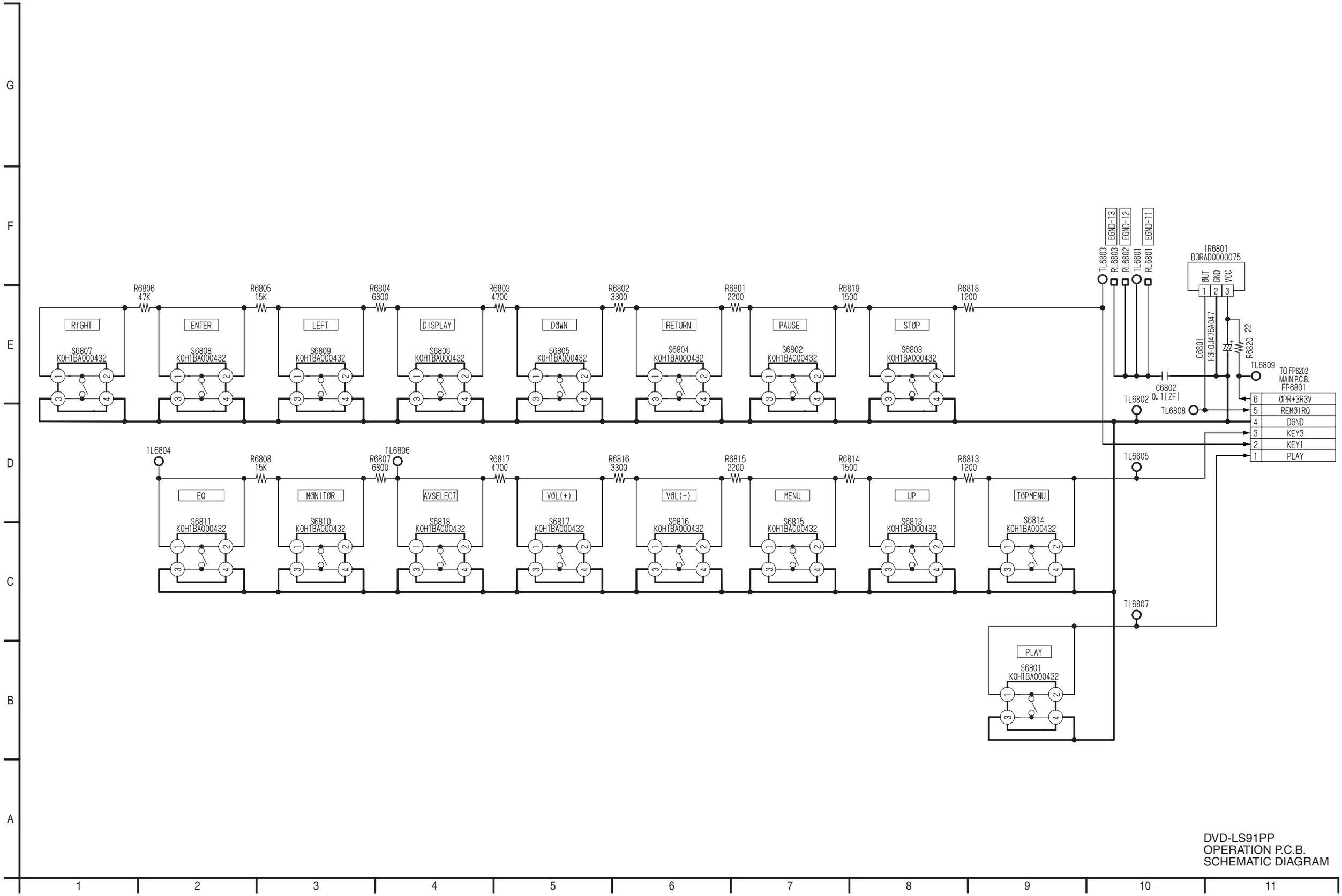
DVD-LS91PP
POWER SUPPLY SECTION
(MAIN P.C.B.(2/10))
SCHEMATIC DIAGRAM

6 | 7 | 8 | 9 | 10 | 11


J
AUDIO SIGNAL
A AOUTL
A AOUTR
R4714 0
R4713 0
C4737 F2G0G331A012
C4738 F2G0G331A012
R4731 27
R4733 1K
R4734 1K
R4732 27
QR4703 B1GFGCAA0001 (MUTE)
R4735 4700
C4727 0.01
R4736 4700
C4728 0.01
LB4703 J0JBC0000028
LB4704 J0JBC0000028
LB4706 J0JBC0000028
LB4707 J0JBC0000028
L4702 J0JBC0000028
CL4704
CL4706
CL4705
CL4702
CL4703
HEADPHONE
K2HC104B0039 JK4703
P AAGND
A MUTEVM
R4725 27
R4727 1K
R4728 1K
R4726 27
QR4702 B1GFGCAA0001 (MUTE)
R4729 4700
C4725 0.01
R4730 4700
C4726 0.01
LB4701 J0JBC0000028
LB4702 J0JBC0000028
LB4708 J0JBC0000028
LB4709 J0JBC0000028
L4701 J0JBC0000028
CL4707
CL4708
CL4709
CL4710
CL4711
HEADPHONE
K2HC104B0039 JK4702
HPJ0PEN-H @P
C4743 100P
C4732 0.1
EGND-3
RL4701
C4744 100P
A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION
DVD-LS91PP
XBS SECTION
(MAIN P.C.B.(10/10))
SCHEMATIC DIAGRAM



DVD-LS91PP
VIDEO OUT SECTION
(MAIN P.C.B.(6/10))
SCHEMATIC DIAGRAM



DVD-LS91PP
OPERATION P.C.B.
SCHEMATIC DIAGRAM

C

D+5V
D+3R3V
VHALF
TRVDRV
ACTMUT-L
TRDRV
FODRV
MGND
F-
F+
T-
T+
M+5R5V
TRV-SW+

RX2651
D1H81034A024

R2523
47K

TO TRAVERSE
MECHANISM UNIT
FP2501

CKD1 DC1 1
CKD2 DC2 2
CKD3 SW1 3
CKD4 SW2 4
CKD5 VCC 5
CKD6 VH 6
CKD7 H2- 7
CKD8 H2+ 8
CKD9 H3- 9
CKD10 H3+ 10
CKD11 H1- 11
CKD12 H1+ 12
CKD13 A2 13
A2 14
CKD15 A3 15
A3 16
CKD17 A1 17
A1 18

C2501
100P

IC2601
COGB60000048
(BA5837FM-E2)
(TRAVERSE MOTOR DRIVE)

28	27	26	25	24	23	22	30	21	20	19	18	17	16	15	
LDCNT	MUTE3	TRIN	BIAS2	LDIN	VIN3	PREVCC	FIN	VCC (CH1,2) (CH3,4)	MUTE4	GND (CH1,2) (CH3,4)	VO3-	VO3+	VO4-	VO4+	
BIAS1	VIN1	VIN2	OPIN+	OPIN-	OPOUT	GND (PRE)	FIN	VCC (CH1,2)	MUTE12	GND (CH1,2)	VO2-	VO2+	VO1-	VO1+	
1	2	3	4	5	6	7	29	8	9	10	11	12	13	14	

C2602 0.1[ZF]
C2604 0.1[ZF]
C2607 0.1[ZF]
C2606 0.1[ZF]
C2605 F3G1A476A037

LB2651
JOJHC0000045

F3G1A476A037

C2651
C2652
F3F0J4760004
C2653 0.1[ZF]
C2654 0.1[ZF]
R2652 ERJ2RQJR68U
C2661 0.1[ZF]
C2656 0.1[ZF]
C2657 0.1

IC2651
COGBF0000004
(BA6679FM-E2)
(SPINDLE MOTOR DRIVE)

28	27	26	25	24	23	22	30	21	20	19	18	17	16	15	
RNF	VM	GSM	VCC	FG	PS	EC	FIN	ECR	FR	FG2	SB	CNF	BR	VH	
NC	A3	NC	A2	NC	NC	A1	FIN	GND	H1+	H1-	H2+	H2-	H3+	H3-	
1	2	3	4	5	6	7	29	8	9	10	11	12	13	14	

CL2654 CL2655
CL2651 CL2652
CL2653

R2653 15K
R2651 470

C2655 0.1[ZF]
C2658 0.01
C2659 0.01
C2660 0.01
C2664 0.01
C2662 0.01
C2663 0.01

HFG D3
SS D3
SPDRV D3

DGND
GND

R2501 470

A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION

DVD-LS91PP
SERVO SECTION
(MAIN P.C.B.(3/10))
SCHEMATIC DIAGRAM

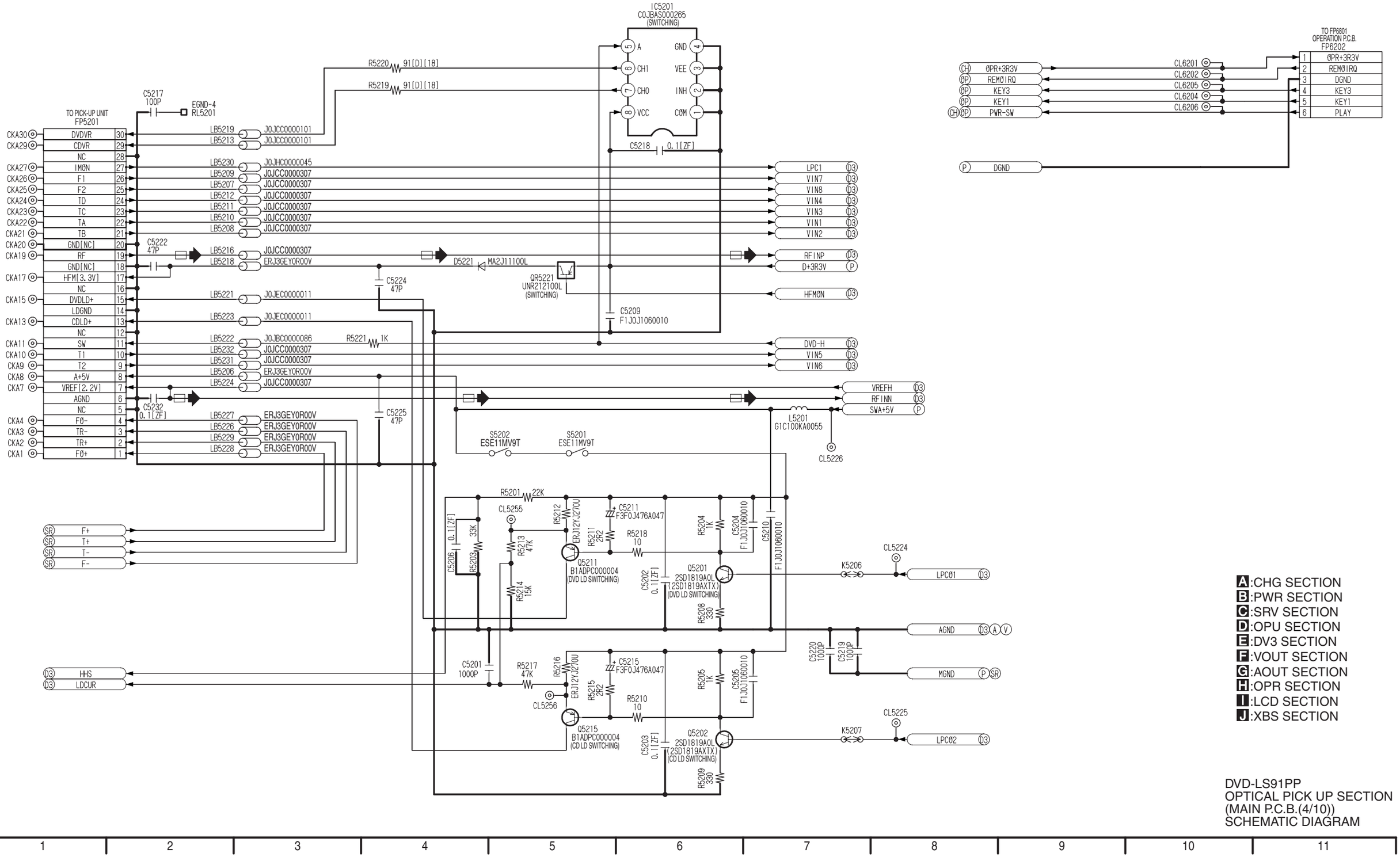
G F E D C B A

1 2 3 4 5 6 7 8 9 10 11

B

A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION

DVD-LS91PP
POWER SUPPLY SECTION
(MAIN P.C.B.(2/10))
SCHEMATIC DIAGRAM



DVD-LS91PP
OPTICAL PICK UP SECTION
(MAIN P.C.B.(4/10))
SCHEMATIC DIAGRAM

A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION

H

CHGØN-H
CHG-ICTL
H:CHARGE ØN
H:CHARGE HIGH
EXT-MUTE
LCD-MUTE
ADACØN-H
PWRØN-H
H:VIDEØ MUTE ØN
L:LCD MUTE ØN
H:AUDIØ DAC ØN
H:POWER ØN
LCDBLØN-H
LCDØN-H
DVDØN-H
PØN-H
H:BACK LIGHT ØN
H:LCD ØN
H:DVD ØN
H:POWER ØN
ØPRØN-H
HPSENSE-H
POWERMUT
XBSØN-H
H:POWER MUTE ØN
97(H:XBS ØN) 91(H:MUTE ØN)
L:LS91 H:LX97
ANTIN-L
Ø-STB
FMT:L
L:DVD H:TUNER
R6049 47K
DVD-TUNER
R6028 47K
R6032 47K
R6040 10K
I2C DATA(LCD)
I2C CLØCK(LCD)
I2CDAT
I2CCLK
C6010 0.1[ZF]
CL6022

D6002 LNJ414K82RA1
CL6009
CHARGE
R6046 150
D6003 LN3829N83RA
R6025 330
CL6010
STANDBY

QR6001 UNR521300L (INV)
R6022 1500
C6007 0.1[ZF]
A+5V
AVIN
AVIN-INV
H:AVIN
KEY1
KEY3
KEY2

R6006 3300
R6008 2200
R6012 1500
R6014 1200
R6003 0
REPEAT S6001 KØH1BA000432
30SEC.SKIP S6002 KØH1BA000432
F.SKIP S6003 KØH1BA000432
R.SKIP S6004 KØH1BA000432
RX6002 D1H81034A024
X6001 H2D800400017
R6019 0
CL6005

IC6002
MN101C62DAA
(OPERATION MPU)

VSS3 PA0 PA1 PA2 PA3 PA4 PA5 PA6 PA7 VREF+ VDD1 ØSC2 ØSC1 VSS1 XI XØ MMØD NRST PØØ PØ1
[79]PB1 [80]PB0
[61]P64 [62]P65
[21]PØ2 [22]PØ3
[39]P33 [40]P34
P82 P83 P84 P85 P86 P87 P77 P76 P75 P74 P73 P72 P71 P70 P67 P66
P63 P62 P61 P60 VDD2 P54 VSS2 P53 P52 P51 P50 P47 P46 P45 P44 P43 P42 P41 P40
P04 P05 P06 P10 P11 P12 P13 P14 P20 P21 P22 P23 P24 P30 P31 P32 P35

I2C DATA(ØSD)
I2C CLØCK(ØSD)
Ø-DATA
Ø-CLK
L:VIDEØ JUCK IN
L:AUDIØ JUCK IN
L:HP JUCK IN
L:AC ADAPTER ØN
L:PLAY SW ØN
VJIN-L
AJIN-L
HPJØPEN-H
ADPØN-L
PWR-SW
D6004 MA2J11100L
CL6014

ØPR+3R3V
DGND
+3.3V
R6004 27K
R6005 10K[D][18]
R6041 10K[D][18]
R6013 10K[D][18]
CL6004 CL6006 CL6007
BAT-V
BAT-TYPE
BAT-T
CHG-V
R6007 68K[D][18]
RX6001 D1H81034A024
R6043 100K[D]
C6002 0.1
C6003 0.1
R6010 33K[D][18]
R6011 0
C6004 1[18]
TH6001 ERTJ0E103FA
R6042 1200[D][18]
C6005 0.1
C6006 0.1
IC6001 COEBB0000036
CL6002
C6001 0.01
ØPRRST
L:IC RESET
C6008 0.1[ZF]
R6044 10K
R6026 10K
R6030 0[18]

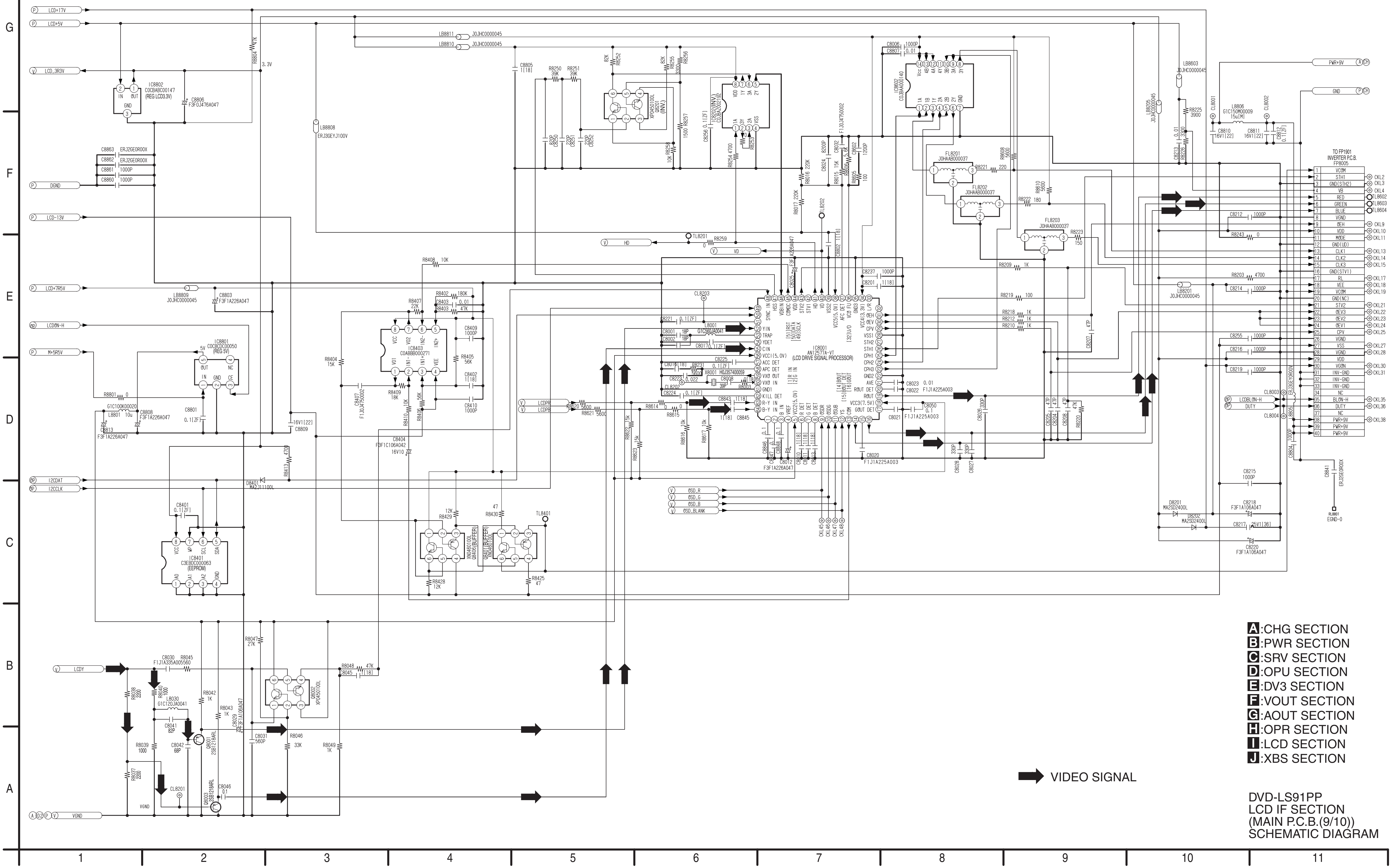
ESE11MV91 S6005
ØPEN/CLØSE
C6012 0.1[ZF]
CL6011 CL6012 CL6013
R6033 0[18]
R6034 0[18]
R6035 0[18]
DSPCLK
STATUS
CMD
GND
AVIN VSYNC
AUX VSYNC
VSYNC
PWRNG-L
VSYNCMØN
VD

HPMUT-L
DUTY
REMØIRQ
L:HP MUTE ØN
LCD BRIGHT PWM
IR REMØCØN DATA IN
CL6001
IC6007 COEBE0000124 (RESETIC)

IC6003
CØJBAA000344
(VOL AMP)
HCØ8 (AND)
C6009 0.1
C6011 1[18]
R6027 27K
DD+3R3V
DCVØL
DC VØLUME

DVD-LS91PP
OPERATION SECTION
(MAIN P.C.B.(8/10))
SCHEMATIC DIAGRAM

1 2 3 4 5 6 7 8 9 10 11



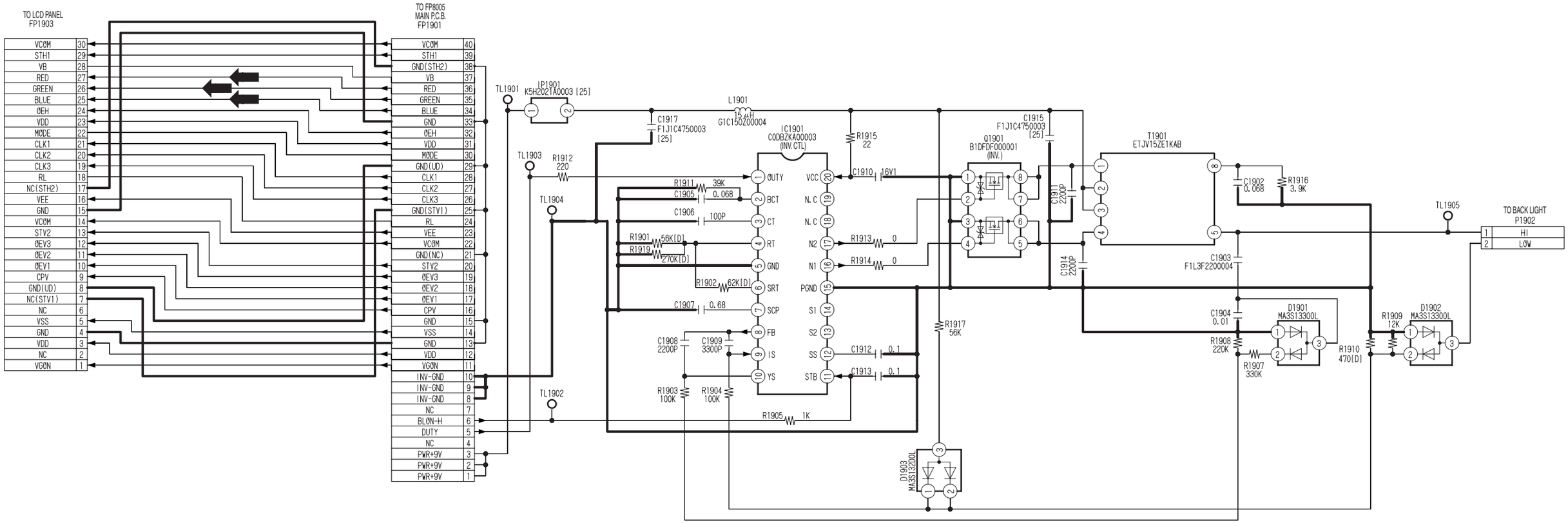
LCD+17V
LCD+5V
LCD_3R3V
DGND
LCD-13V
LCD+7R5V
LCDON-H
M+5R5V
I2CDAT
I2CCLK
LCDY
VGND
IC8802 C0CBABC00147 (REG LCD3.3V)
IC8801 C0CBCDC00050 (REG 5V)
IC8403 C0ABBB000271
IC8401 C3EBDC000063 (EEPROM)
Q8406 (BUFFER) XN0460100L
Q8401 (BUFFER) XN0460100L
Q8002 XP0450100L
Q8001 2SB1218ARL
Q8003 2SB1218ARL
Q8201 XP0450100L (INV.)
IC8202 (INV.) C0JBAZ002192
IC8602 C0JBAA000140
IC8001 AN12577A-VT (LCD DRIVE SIGNAL PROCESSOR)
FL8201 J0HAAB000037
FL8202 J0HAAB000037
FL8203 J0HAAB000037
HD
VD
LCDPR
LCDPB
OSD_R
OSD_G
OSD_B
OSD_BLANK
PWR+9V
GND
LCDBLON-H
DUTY
TO FP1901 INVERTER P.C.B. FP8005
1 VCOM
2 STH1
3 GND(STH2)
4 VB
5 RED
6 GREEN
7 BLUE
8 VGND
9 OEH
10 VDD
11 MODE
12 GND(UD)
13 CLK1
14 CLK2
15 CLK3
16 GND(STV1)
17 RL
18 VEE
19 VCOM
20 GND(NC)
21 STV2
22 OEV3
23 OEV2
24 OEV1
25 CPV
26 VGND
27 VSS
28 VGND
29 VDD
30 VGON
31 INV-GND
32 INV-GND
33 INV-GND
34 NC
35 BLON-H
36 DUTY
37 NC
38 PWR+9V
39 PWR+9V
40 PWR+9V
RL8801 EGND-0

A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION

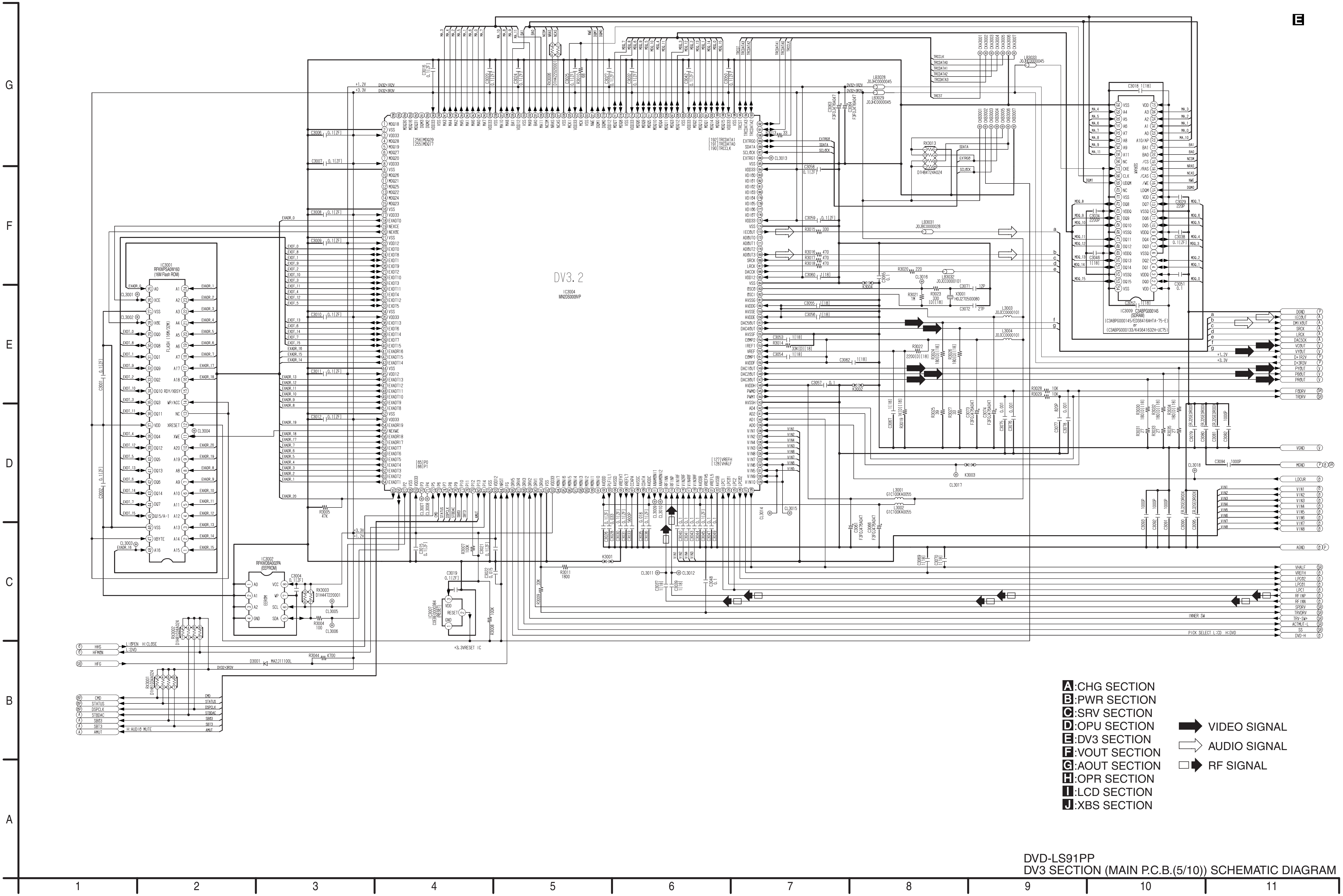
VIDEO SIGNAL

DVD-LS91PP
LCD IF SECTION
(MAIN P.C.B.(9/10))
SCHEMATIC DIAGRAM

VIDEO SIGNAL



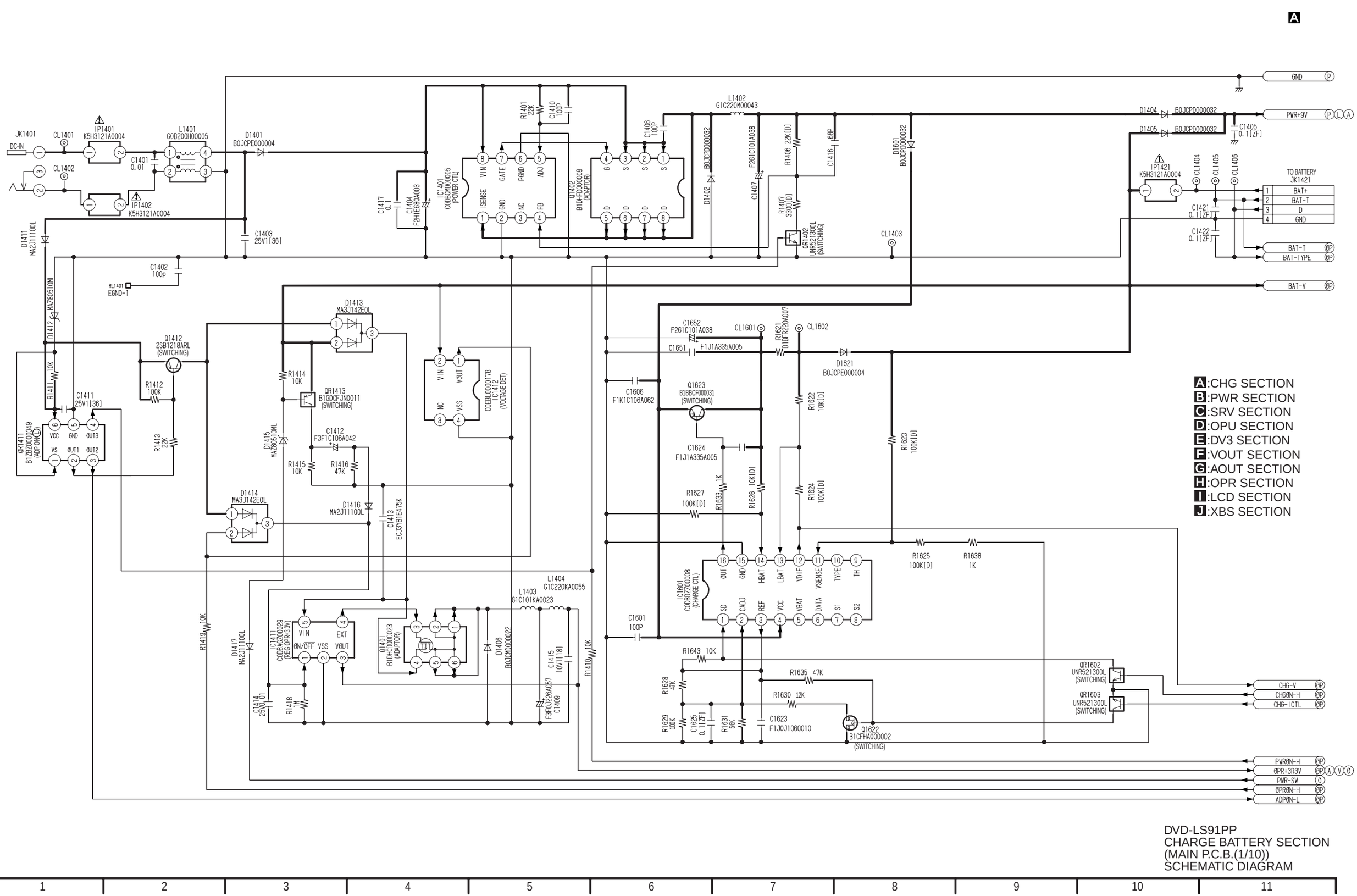
DVD-LS91PP
INVERTER P.C.B.
SCHEMATIC DIAGRAM



- **A**:CHG SECTION
- **B**:PWR SECTION
- **C**:SRV SECTION
- **D**:OPU SECTION
- **E**:DV3 SECTION
- **F**:VOUT SECTION
- **G**:AOUT SECTION
- **H**:OPR SECTION
- **I**:LCD SECTION
- **J**:XBS SECTION

VIDEO SIGNAL
AUDIO SIGNAL
RF SIGNAL

DVD-LS91PP
DV3 SECTION (MAIN P.C.B.(5/10)) SCHEMATIC DIAGRAM

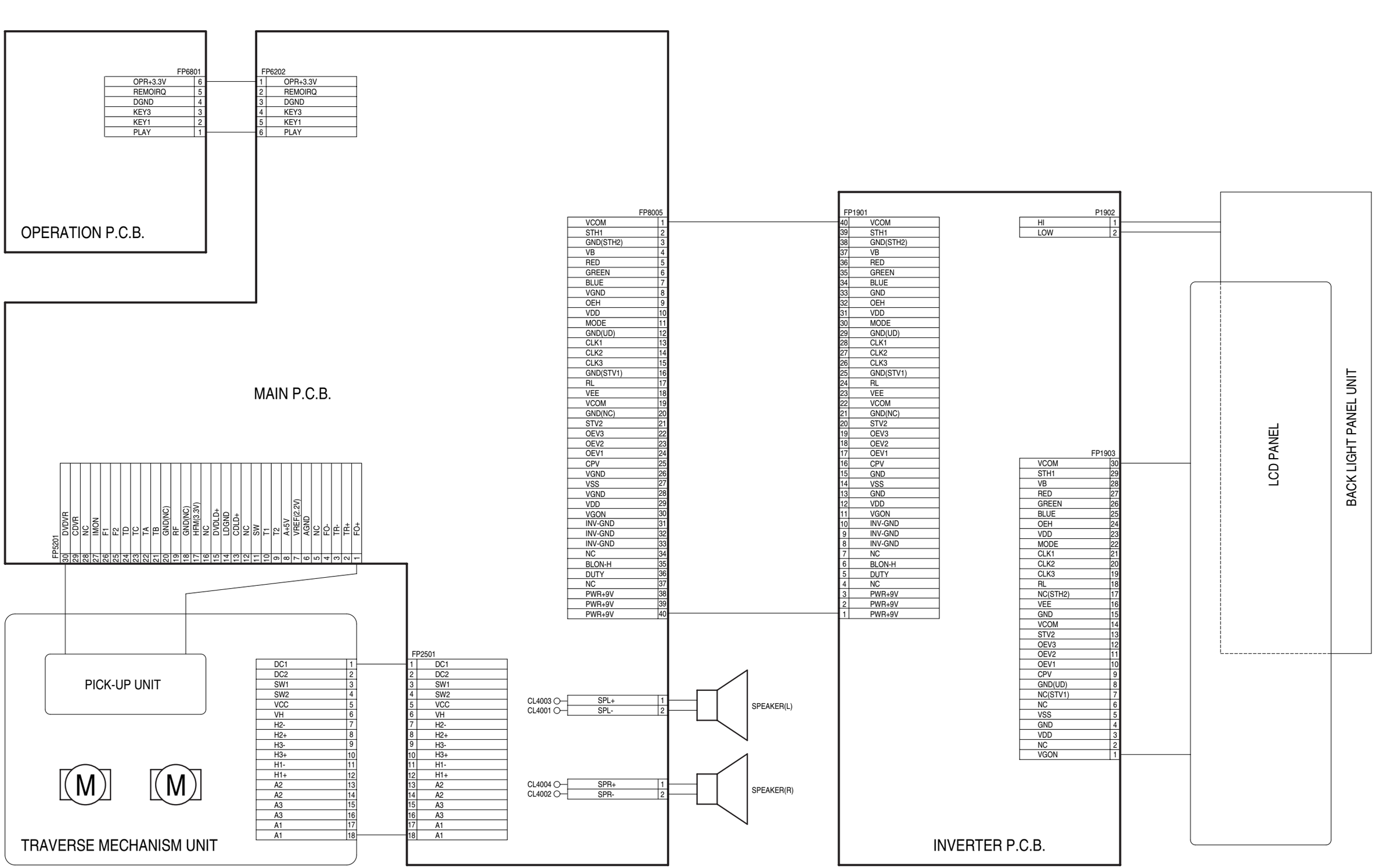

A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION
DVD-LS91PP
CHARGE BATTERY SECTION
(MAIN P.C.B.(1/10))
SCHEMATIC DIAGRAM
JK1401
DC-IN
CL1401
CL1402
IP1401 K5H3121A0004
IP1402 K5H3121A0004
L1401 G0B200H00005
C1401 0.01
D1401 B0JCPE000004
C1403 25V1[36]
C1404 F2H1E680A003
C1417 0.1
IC1401 C0EBCM000005 (POWER CTL)
R1401 22K
C1410 100P
C1406 100P
Q1402 B1DHFD000008 (ADAPTOR)
L1402 G1C220M00043
D1402 B0JCPD000032
F2G1C101A038
C1407
R1406 22K[D]
C1416 68P
D1601 B0JCPD000032
R1407 3300[D]
QR1402 UNR521300L (SWITCHING)
CL1403
GND (P)
D1404 B0JCPD000032
D1405 B0JCPD000032
PWR+9V (P)(L)(A)
C1405 0.1[ZF]
IP1421 K5H3121A0004
CL1404
CL1405
CL1406
TO BATTERY JK1421
1 BAT+
2 BAT-T
3 D
4 GND
C1421 0.1[ZF]
C1422 0.1[ZF]
BAT-T (OP)
BAT-TYPE (OP)
BAT-V (OP)
D1411 MA2J11100L
C1402 100p
RL1401 EGND-1
D1412 MAZ8051OML
Q1412 2SB1218ARL (SWITCHING)
R1411 10K
R1412 100K
R1413 22K
C1411 25V1[36]
QR1411 B1ZBZ0000049 (ADPON)
D1413 MA3J142E0L
R1414 10K
QR1413 B1GDCFJN0011 (SWITCHING)
C1412 F3F1C106A042
D1415 MAZ8051OML
R1415 10K
R1416 47K
D1414 MA3J142E0L
D1416 MA2J11100L
C1413 EC3BYB1E475K
IC1412 C0EBL0000178 (VOLTAGE DET)
C1652 F2G1C101A038
CL1601
CL1602
C1651 F1J1A335A005
R1621 D1BFR220A007
D1621 B0JCPE000004
C1606 F1K1C106A062
Q1623 B1BBCF000031 (SWITCHING)
C1624 F1J1A335A005
R1622 10K[D]
R1623 100K[D]
R1627 100K[D]
R1633 1K
R1626 10K[D]
R1624 100K[D]
R1625 100K[D]
R1638 1K
IC1601 C0DBDZZ00008 (CHARGE CTL)
C1601 100P
R1643 10K
R1635 47K
R1630 12K
R1628 47K
R1629 100K
C1625 0.1[ZF]
R1631 56K
C1623 F1J0J1060010
Q1622 B1CFHA000002 (SWITCHING)
QR1602 UNR521300L (SWITCHING)
QR1603 UNR521300L (SWITCHING)
CHG-V (OP)
CHGON-H (OP)
CHG-ICTL (OP)
D1417 MA2J11100L
IC1411 C0DBAGZ00029 (REG OPR+3.3V)
Q1401 B1DHCD000023 (ADAPTOR)
D1406 B0JCMD000022
L1403 G1C101KA0023
L1404 G1C220KA0055
C1415 10V1[18]
F3E0J226A057 C1409
C1414 25V0.01
R1418 1M
R1419 10K
R1410 10K
PWRON-H (OP)
OPR+3R3V (OP)(A)(V)(I)
PWR-SW (I)
OPRON-H (OP)
ADPON-L (OP)

G

AUDIO SIGNAL

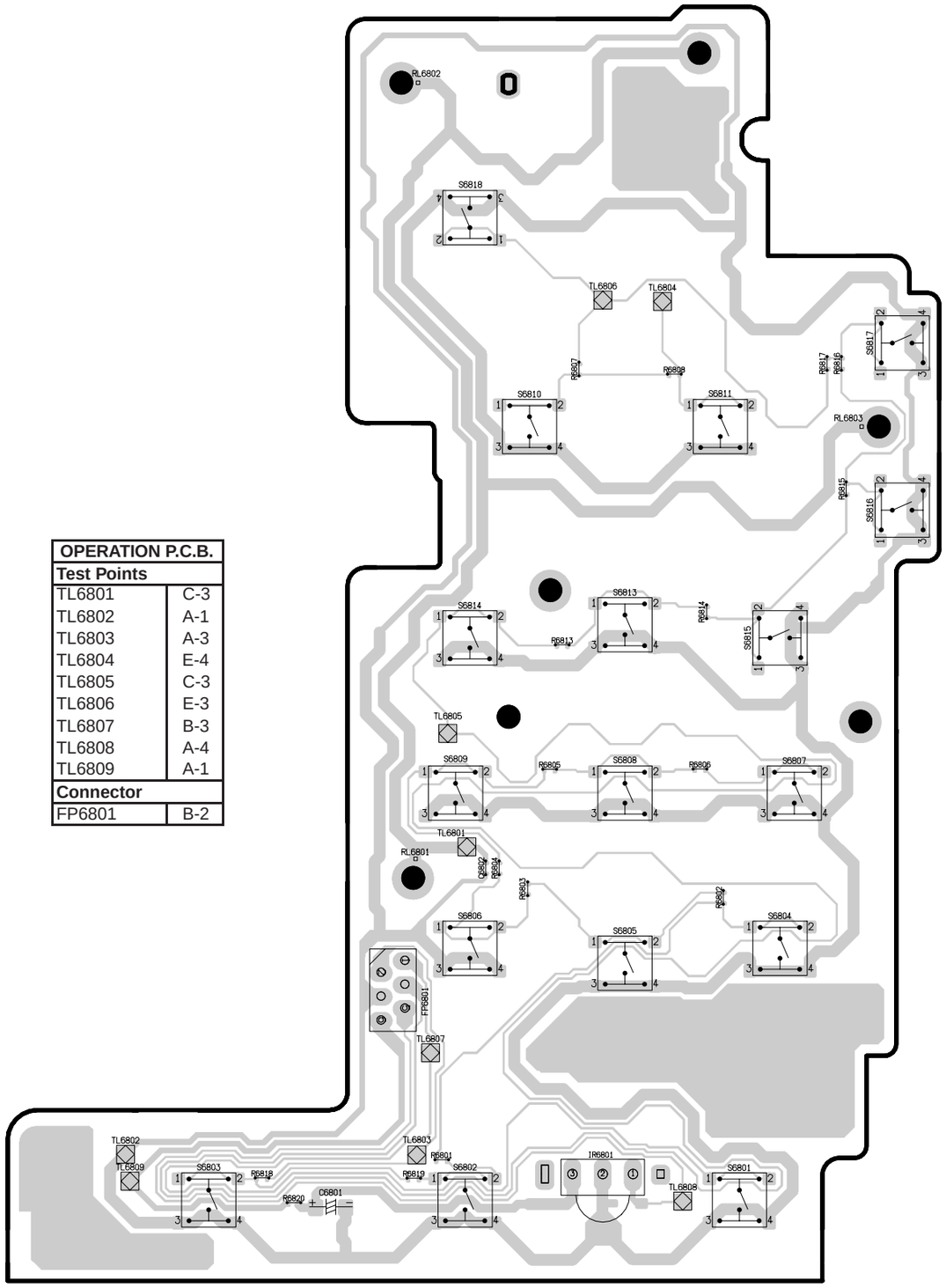
A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV3 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION
J:XBS SECTION

DVD-LS91PP
AUDIO OUT SECTION
(MAIN P.C.B.(7/10))
SCHEMATIC DIAGRAM



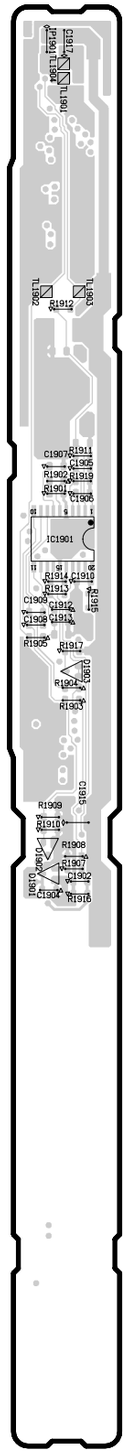
DVD-LS91PP
INTERCONNECTION
SCHEMATIC DIAGRAM

OPERATION P.C.B.

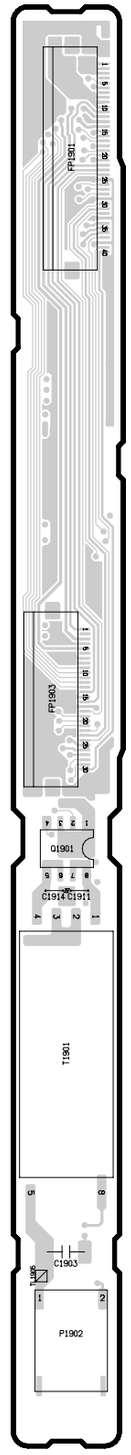


OPERATION P.C.B.	
Test Points	
TL6801	C-3
TL6802	A-1
TL6803	A-3
TL6804	E-4
TL6805	C-3
TL6806	E-3
TL6807	B-3
TL6808	A-4
TL6809	A-1
Connector	
FP6801	B-2

INVERTER P.C.B. (1/2)



INVERTER P.C.B. (2/2)



INVERTER P.C.B.		
Transistor		
Q1901	C-7	F
Integrated Circuit		
IC1901	D-5	C
Test Points		
TL1901	F-5	C
TL1902	E-5	C
TL1903	E-5	C
TL1904	F-5	C
TL1905	A-7	F
Connectors		
FP1901	F-7	F
FP1903	D-7	F
P1902	A-7	F

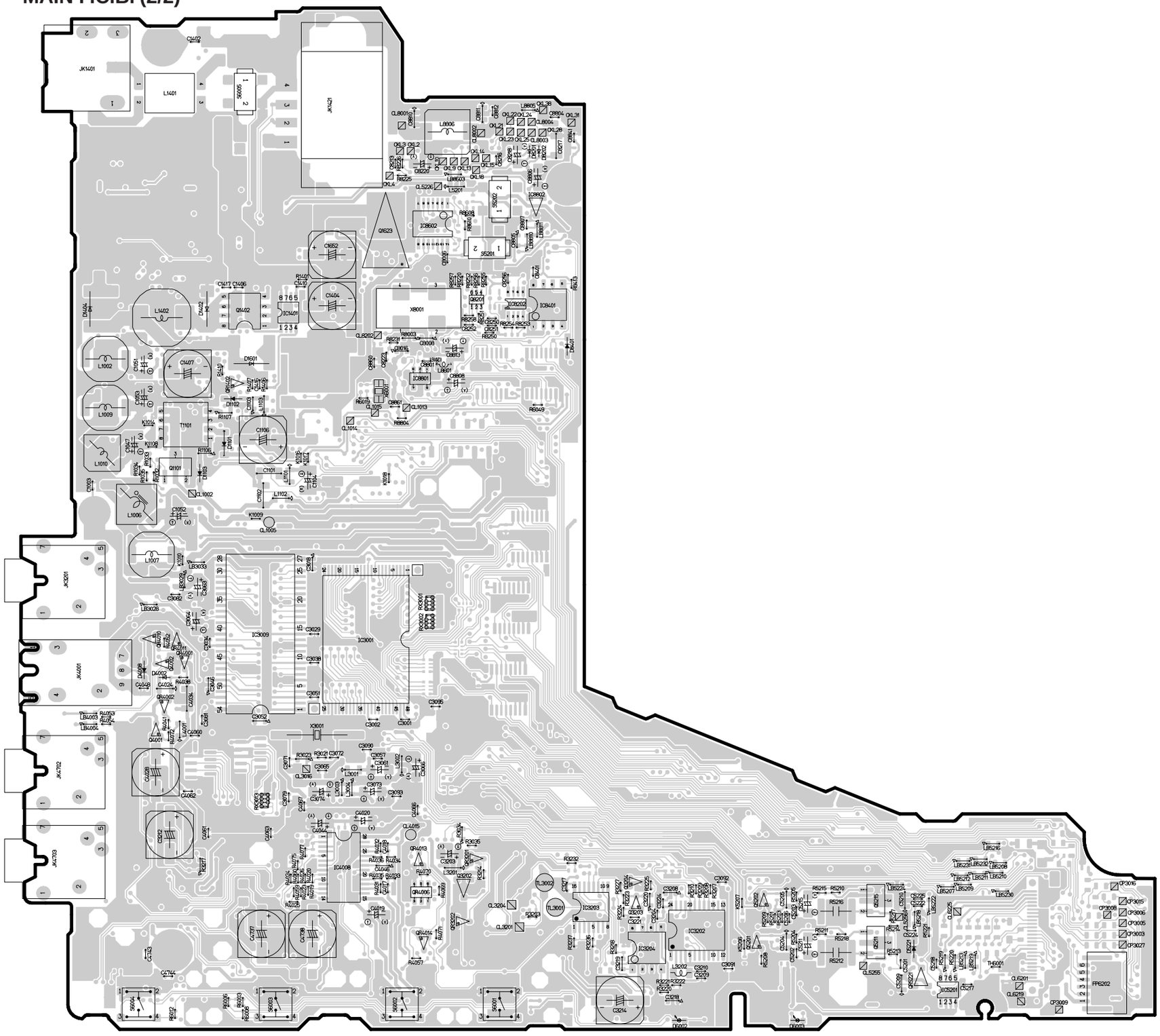
ADDRESS INFORMATION
C…COMPONENT SIDE
F…FOIL SIDE

(COMPONENT SIDE)

(FOIL SIDE)

DVD-LS91PP
OPERATION P.C.B. (REP3999A-C)
& INVERTER P.C.B. (REP3894A-S)

MAIN P.C.B. (2/2)



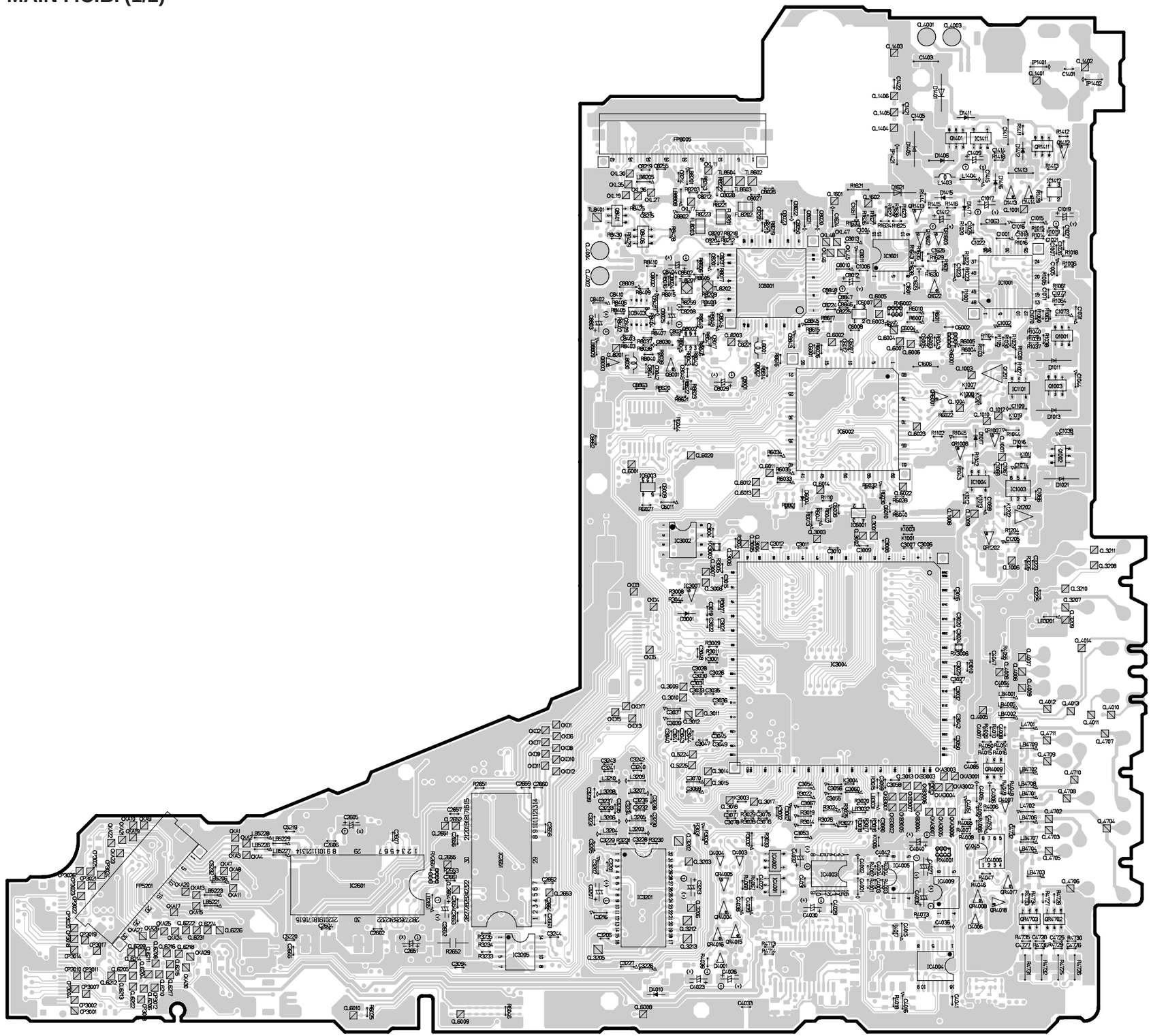
(FOIL SIDE)

MAIN P.C.B.											
Transistors			IC3004	C-5	C	CL3015	B-5	C	CL6209	A-2	C
Q1001	E-6	C	IC3007	C-5	C	CL3016	B-2	F	CL6210	A-2	C
Q1002	D-6	C	IC3009	C-2	F	CL3017	B-5	C	CL6211	A-2	C
Q1003	D-6	C	IC3201	B-4	C	CL3018	B-5	C	CL6212	A-1	C
Q1101	D-2	F	IC3202	A-4	F	CL3201	A-4	F	CL6213	A-1	C
Q1201	D-6	C	IC3203	A-4	F	CL3202	B-4	C	CL6214	A-2	C
Q1202	D-6	C	IC3204	A-4	F	CL3203	B-4	C	CL6215	A-2	C
Q1401	F-6	C	IC3205	A-4	C	CL3204	B-3	F	CL6216	A-2	C
Q1402	E-2	F	IC4001	B-5	C	CL3205	A-4	C	CL6217	A-2	C
Q1412	F-6	C	IC4002	B-5	C	CL3206	A-5	C	CL6218	A-2	C
Q1622	E-6	C	IC4003	B-5	C	CL3207	C-6	C	CL6219	A-6	F
Q1623	E-3	F	IC4004	A-6	C	CL3208	C-7	C	CL6222	A-2	C
Q3202	B-3	F	IC4005	B-6	C	CL3209	C-6	C	CL6224	A-2	C
Q3203	B-4	F	IC4006	B-6	C	CL3210	C-6	C	CL6225	A-6	F
Q3204	B-4	F	IC4008	B-3	F	CL3211	C-7	C	CL6226	A-2	C
Q4001	B-2	F	IC4009	B-6	C	CL3212	A-4	C	CL6231	A-2	C
Q4002	C-2	F	IC5201	A-6	F	CL3213	A-4	C	CL8001	F-3	F
Q5201	A-5	F	IC6001	D-5	C	CL4001	F-6	C	CL8002	F-3	F
Q5202	B-5	F	IC6002	D-5	C	CL4002	E-4	C	CL8003	F-4	F
Q5211	A-5	F	IC6003	D-4	C	CL4003	F-6	C	CL8004	F-4	F
Q5215	B-5	F	IC6007	E-5	C	CL4004	E-4	C	CL8201	D-4	C
Q8001	D-4	C	IC8001	E-5	C	CL4005	C-6	C	CL8202	E-3	F
Q8002	E-4	C	IC8202	E-3	F	CL4006	C-6	C	CL8203	D-5	C
Q8003	D-4	C	IC8401	E-4	F	CL4007	C-6	C	CP3001	A-1	C
Q8201	E-3	F	IC8403	E-4	C	CL4008	C-6	C	CP3002	A-1	C
Q8401	E-4	C	IC8602	E-3	F	CL4009	C-6	C	CP3003	A-7	F
Q8406	E-4	C	IC8801	D-3	F	CL4010	C-7	C	CP3004	A-1	C
Transistors-resistors			IC8802	E-4	F	CL4011	C-7	C	CP3005	A-7	F
QR1007	D-6	C	**Test Points**			CL4012	C-6	C	CP3006	A-7	F
QR1008	D-6	C	CL1001	E-6	C	CL4013	C-7	C	CP3007	A-1	C
QR1202	C-6	C	CL1002	D-2	F	CL4014	C-7	C	CP3008	A-7	F
QR1402	D-2	F	CL1003	D-6	C	CL4015	B-3	F	CP3009	A-6	F
QR1411	F-6	C	CL1004	D-6	C	CL4702	B-6	C	CP3010	A-1	C
QR1413	E-6	C	CL1005	D-2	F	CL4703	B-6	C	CP3011	A-1	C
QR1602	E-6	C	CL1006	C-6	C	CL4704	B-7	C	CP3012	A-2	C
QR1603	E-6	C	CL1007	D-6	C	CL4705	B-6	C	CP3013	A-2	C
QR3201	B-3	F	CL1008	D-6	C	CL4706	B-7	C	CP3014	A-1	C
QR3202	A-3	F	CL1009	D-6	C	CL4707	B-7	C	CP3015	B-7	F
QR4001	C-2	F	CL1010	D-6	C	CL4708	B-7	C	CP3016	B-7	F
QR4002	C-2	F	CL1012	D-6	C	CL4709	B-6	C	CP3017	A-1	C
QR4004	A-5	C	CL1013	D-3	F	CL4710	B-7	C	CP3018	A-1	C
QR4005	B-5	C	CL1014	D-3	F	CL4711	B-6	C	CP3019	A-1	C
QR4006	B-3	F	CL1015	D-3	F	CL5224	B-5	C	CP3020	A-1	C
QR4008	B-6	C	CL1401	F-6	C	CL5225	B-5	C	CP3021	B-1	C
QR4009	B-6	C	CL1402	F-7	C	CL5226	E-3	F	CP3022	B-1	C
QR4010	C-2	F	CL1403	F-6	C	CL5255	A-5	F	CP3023	B-1	C
QR4011	C-2	F	CL1404	F-6	C	CL5256	A-6	F	CP3024	B-1	C
QR4013	B-3	F	CL1405	F-6	C	CL6001	D-4	C	CP3025	B-1	C
QR4014	A-3	F	CL1406	F-6	C	CL6002	D-5	C	CP3026	B-1	C
QR4015	A-5	C	CL1601	E-5	C	CL6003	E-6	C	CP3027	A-7	F
QR4016	A-5	C	CL1602	E-5	C	CL6004	E-6	C	TL3001	A-4	F
QR4017	B-6	C	CL2651	B-3	C	CL6005	E-5	C	TL3002	B-4	F
QR4018	B-6	C	CL2652	B-3	C	CL6006	D-6	C	TL8201	E-4	C
QR4702	A-6	C	CL2653	B-4	C	CL6007	D-6	C	TL8202	E-5	C
QR4703	A-6	C	CL2654	B-3	C	CL6008	A-4	C	TL8401	E-4	C
QR5221	A-6	F	CL2655	B-3	C	CL6009	A-3	C	TL8602	E-5	C
QR6001	D-6	C	CL3001	C-5	C	CL6010	A-3	C	TL8603	E-5	C
Integrated Circuits			CL3002	C-5	C	CL6011	D-5	C	TL8604	E-5	C
IC1001	E-6	C	CL3003	C-5	C	CL6012	D-5	C	**Connectors**		
IC1003	D-6	C	CL3004	C-5	C	CL6013	D-5	C	FP5201	B-2	C
IC1004	D-6	C	CL3005	C-5	C	CL6014	D-5	C	FP6202	A-7	F
IC1101	D-6	C	CL3006	C-5	C	CL6020	D-5	C	FP8005	F-4	C
IC1401	E-2	F	CL3007	C-5	C	CL6022	D-6	C	JK1401	F-1	F
IC1411	F-6	C	CL3008	C-5	C	CL6023	D-6	C	JK1421	F-2	F
IC1412	E-6	C	CL3009	C-4	C	CL6201	A-6	F	JK3201	C-1	F
IC1601	E-6	C	CL3010	C-4	C	CL6202	A-2	C	JK4001	C-1	F
IC2601	B-3	C	CL3011	C-5	C	CL6204	A-2	C	JK4702	B-1	F
IC2651	B-4	C	CL3012	C-4	C	CL6205	A-2	C	JK4703	B-1	F
IC3001	C-3	F	CL3013	B-6	C	CL6206	A-2	C			
IC3002	C-4	C	CL3014	B-5	C	CL6208	A-2	C			

ADDRESS INFORMATION
C...COMPONENET SIDE
F...FOIL SIDE

DVD-LS91PP
MAIN P.C.B. (2/2)
(REP4000F-C)

MAIN P.C.B. (1/2)



(COMPONENT SIDE)

DVD-LS91PP
MAIN P.C.B. (1/2)
(REP4000F-C)

:VIDEO SIGNAL

IC3202 (OSD)

FROM IC6002-55pin O-STB $\overline{CS}$ 6
FROM IC6002-50pin O-CLK SCLK 7
FROM IC6002-51pin O-DATA SIN 8

SERIAL → PARALLEL CONVERSION

ADDRESS CONTROL CIRCUIT
DATA CONTROL CIRCUIT
HORIZONTAL DISPLAY CONTROL
VERTICAL DISPLAY CONTROL
BLINKING/REVERSE VIDEO DISPLAY CONTROL
DISPLAY CONTROL REGISTER
VRAM WRITE ADDRESS
DECODER
DISPLAY RAM
CHARACTER OUTPUT DOT CLOCK GENERATOR
DECODER
FONT ROM
$\overline{VSYNC}$ 21
$\overline{HSYNC}$ 22
TIMING GENERATOR
CHARACTER OUTPUT CONTROL
SHIFT REGISTER
16-19

LCD PANEL
OEH
STH1
CLK1
CLK2
CLK3
RED
GREEN
BLUE
VCOM
SOURCE DRIVER
GATE DRIVER

IC8001-19 4.0Vp-p (20usec/div.)
IC8001-16 4.0Vp-p (20usec/div.)
IC8001-14 3.8Vp-p (20usec/div.)

OSD
9-12

IC3004-147 0.6Vp-p(20usec./div.)
IC3004-148 0.6Vp-p(20usec./div.)
IC3004-149 1.0Vp-p(20usec./div.)
IC3004-157 0.6Vp-p(20usec./div.)
IC3004-156 1.0Vp-p(20usec./div.)

IC3201-21 1.2Vp-p(20usec./div.)
IC3201-18 1.2Vp-p(20usec./div.)
IC3201-30 2.0Vp-p(20usec./div.)
IC3201-24 2.0Vp-p(20usec./div.)

FROM IC6002-74pin EXT-MUTE
FROM IC6002-73pin LCD-MUTE

JK3201 VIDEO IN/OUT
1 2 3 4 5 7
VJIN-L TO IC6002-48pin

IC3004 (DV3.2)
DAC5OUT 157 VCOUT
DAC4OUT 156 VYOUT
DAC1OUT 149 PYOUT
DAC2OUT 148 PBOUT
DAC3OUT 147 PROUT

IC3203 (SELECTOR)
12 X0
11 X3
15 X2
X 13
B 9
A 10

IC3201 (VIDEO DRIVE)
CIN 4 → BIAS → 6dB → + → 6MHz LPF → 75Ω → CVOUT 30 29
MUTE1 5
YIN 8 → CLAMP → 6dB
PY/GIN 11 → BIAS H / L → CLAMP → 6dB → 12MHz LPF → 75Ω → PY/GOUT 24 23
PB/BIN 13 → BIAS → 6dB → 12MHz LPF → 75Ω → PB/BOUT 21 20
MUTE2 14
PR/RIN 15 → BIAS → 6dB → 12MHz LPF → 75Ω → PR/ROUT 18 17

Q3202 QR3201 QR3202
MUTE
Q3204 AMP

Q8002 AMP
Q8001 AMP
Q8003 AMP

SYNCIN 48 → SYNC SEPA → H COUNTER → H DECODER → 1/2 DIV → V COUNTER → V DECODER
HD 41
VD 40
STV2 43 → H DECODER → PLL COUNTER
PH-DET → VCO → DIV
YIN 52 → CLAMP → SYNC CUT → DELAY → SHARPNESS → GCA
CIN 55 → BPF → ACC AMP → R-Y B-Y DEMOD → YUV SW → GCA
LIMIT → INVERT → GAMMA → CONTRAST → BRIGHT → OSD SW

FROM IC6002-52pin I2CCLK SCLK 49
FROM IC6002-53pin I2CDAT DATA 50
IIC BUS

APC → TINT
VXO → VXO GENE → KILLER
59
60
B-Y IN 64
R-Y IN 63

G-Y GENE → MATRIX → INT/EXT SW → CLAMP

IC8602 ×3
CPH1 25
CPH2 24
CPH3 23

R-OUT 19
G-OUT 16
B-OUT 14
VCOM 13
IC8403 2 1
Q8406,Q8401 BUFFER
22

QR6001 INV ← AVIN-INV ← FROM IC6002-75pin

IC8001 (LCD DRIVE SIGNAL PROCESSOR)

DVD-LS91PP
VIDEO BLOCK DIAGRAM

RF SIGNAL　MOTOR DRIVE SIGNAL　TRACKING ERROR SIGNAL　FOCUS ERROR SIGNAL

OPTICAL PICK UP UNIT

PHOTO DETECTOR

B1 B2 A1 A2 A4 A3 B4 B3

HEAD AMP

LASER DIODE　DVDLD+　LASER DIODE　CDLD+

Q5201,Q5211 LD DRIVE

Q5202,Q5215 LD DRIVE

IC3004 (DV3.2)

VIN5 131
VIN6 132
VIN7 133
VIN8 134
VIN1 138
VIN2 137
VIN3 135
VIN4 136
VREFH 127
LPCO1 124
LPC1 123
LPCO2 126
LPC2 125
RFINN 113
RFINP 114

PWM1 144 TRDRV
PWM0 145 FODRV
DRV0 91 TRVDRV
DRV3 88 ACTMUT-L

IC2601
(TRAVERSE MOTOR DRIVE)

TRDRV → VIN1 2
FODRV → VIN2 3
TRVDRV → VIN3 23

LEVEL SHIFT

VO3+ 17 DC1
VO3- 18 DC2
TRAVERSE MOTOR

BIAS1

LEVEL SHIFT

VO1+ 14
VO1- 13
VO2+ 12
VO2- 11

IC2601-11,12,13,14
0.4Vp-p(0.5usec./div.)

OPTICAL PICK UP UNIT

ACTUATOR
TRACKING COIL
FOCUS COIL

TR+
TR-
FO+
FO-

SPINDLE MOTOR UNIT

IC2651
(SPINDLE MOTOR DRIVE)

A3 2
A2 4
A1 7

DRIVER
GAIN CONTROL
CURRENT SENSE AMP

RNF 28 M+5.5V

H1+ 9
H1- 10
H2+ 11
H2- 12
H3+ 13
H3- 14

HALL AMP
HALL1
HALL2
HALL3

TL　TSD
PS

TORQUE SENS AMP

D R Q CK Q̄

VCC

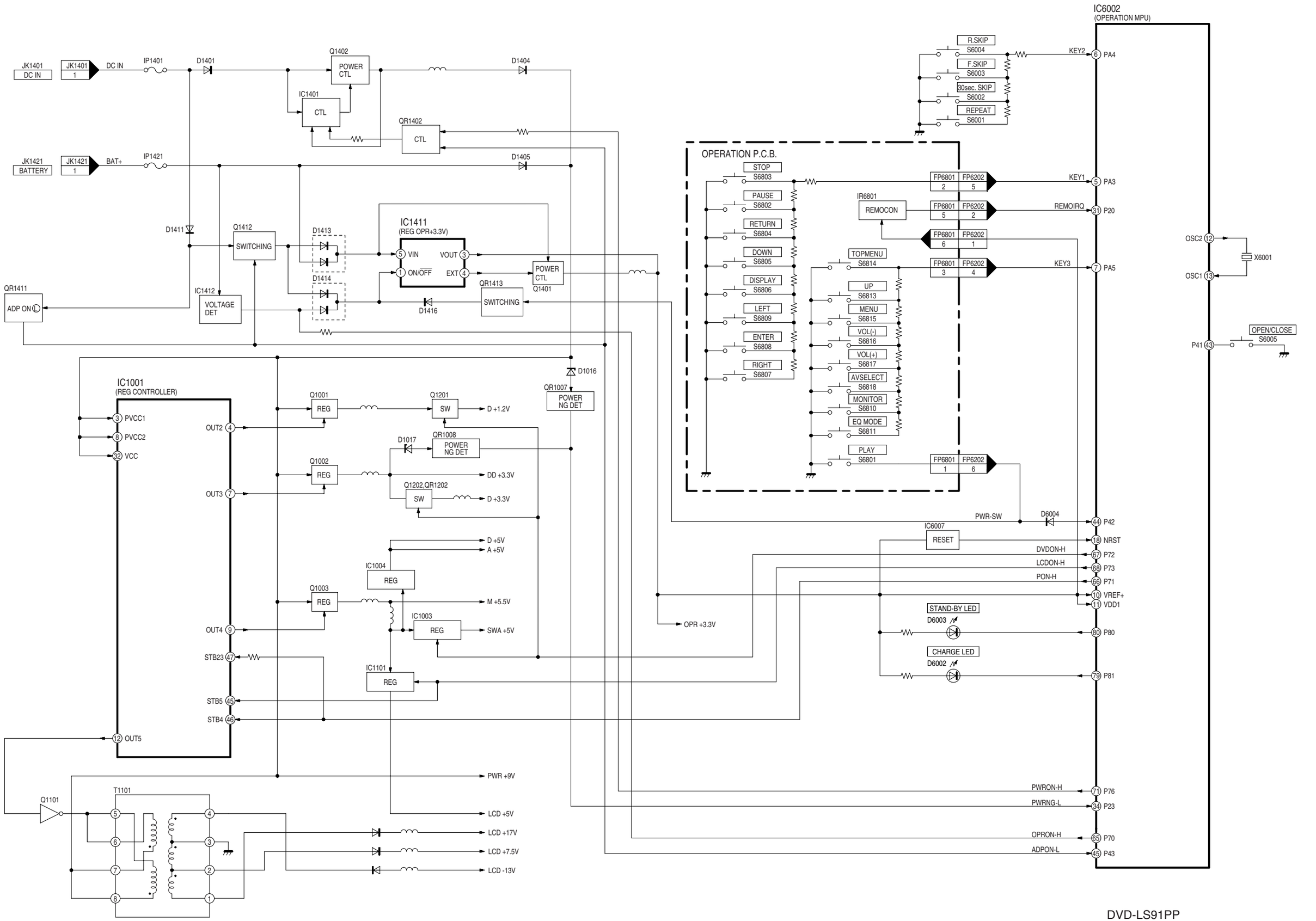
IC2651-24
3.4Vp-p(5msec./div.)

PS 23 SS 87 DRV4
EC 22 SPDRV 90 DRV1
ECR 21 VHALF 128
FG 24 HFG 85 FG
TRV-SW+ 89 DRV2

CH3 MUTE 27
CH1,2 MUTE 9

TRAVERSE SW

DVD-LS91PP
SERVO BLOCK DIAGRAM



DVD-LS91PP
POWER SUPPLY BLOCK DIAGRAM

:AUDIO SIGNAL

IC3004-169
5.0Vp-p(5usec./div.)

IC4003-14,15
4.0Vp-p(0.5msec./div.)

IC3004
(DV3.2)

IC4003
(AUDIO DAC)

IC4004
(SELECTOR))

IC4008
(AUDIO POWER AMP/DC VOLUME CONTROL)

ADOUT3 (DMIX OUT) 169
SRCK 168
LRCK 167
DACCK (DACSCK) 166
IECOUT 173
P13 (AMUT) 80

DATA 6
BCK 7
LRCK 8
SCK 5
ZERR/ ZEROA 16

AUDIO SERIAL PORT
CONTROLLER
MODULATOR
SYSTEM CLOCK MANAGER
D/A
LPF
VOUTR 14
VOUTL 15

B 9
DVD-TUNER
A 10
X0 12
Y0 1
X3 11
X2 15
Y3 4
Y2 2
X 13
Y 3

QR4006(1/2)
MUTE
QR4013
BUFFER

R-IN 10
L-IN 12
BIAS
VOLUME CONTROL

HPSENSE 21
DC VOL 7
MUTE 5
S-DOWN 2
MODE CONTROL
POWER MANAGEMENT

R-OUT- 26
R-OUT+ 28
L-OUT+ 15
L-OUT- 17
SPEAKER R
SPEAKER L

D4003
QR4016
BUFFER

QR4014
MUTE

IC6002
(OPERATION MPU)

P85 75 AVIN
QR6001
INV.
P65 62 XBSON-H
P67 64 HPSENSE-H
P10 26
IC6003
P66 63 POWERMUT
P11 27 HPMUT-L
P45 47 AJIN-L
P44 46 HPJOPEN-H

QR4015
BUFFER
D4004

IC4005(1/2)
IC4005(1/2)
IC4006
(SW AMP)
INA 2
INB 3
OUTA 8
OUTB 5
O CNT 4

D4006
SWITCHING
QR4008
QR4017
QR4018

QR4004
MUTE CTRL

D4007
QR4009 (1/2)
MUTE
QR4009 (1/2)
MUTE

QR4011
MUTE
D+3.3V
QR4010
SWITCHING
Q4002
JACK-IN DET.

JK4001
OPT OUT
AUDIO IN/OUT

QR4005
BUFFER
QR4702(1/2)
MUTE
QR4702(1/2)
MUTE
QR4703(1/2)
MUTE
QR4703(1/2)
MUTE

JK4703
JK4702
HEAD PHONE
HEAD PHONE

DVD-LS91PP
AUDIO BLOCK DIAGRAM

TRAVERSE MECHANISM UNIT

MAIN P.C.B.

PICK-UP UNIT

SPINDLE MOTOR

IC2651

SPINDLE MOTOR DRIVE

TRAVERSE MOTOR

IC2601

TRAVERSE MOTOR DRIVE

FOCUS COIL

TRACKING COIL

IC3004

DV3.2
SERVO CONTROLLER/
OPTICAL DISC CONTROLLER/
AV DECODER/
SYSTEM CONTROLLER

IC3001

16Mbit
FLASH
ROM

IC4003

AUDIO
D/A
CONVERTER

IC4008

AUDIO POWER AMP
DC VOLUME CONTROL

SPEAKER

HEADPHONE

IC4004

SELECTOR

AUDIO IN/OUT

OPT OUT

IC6002

LED

REMOTE CONTROL

KEY

OPERATION
MPU

IC3002

8Kbit
EEP ROM

IC3009

128Mbit
SDRAM

IC3201

VIDEO
DRIVE

IC8001

VIDEO
SIGNAL
PROCESSOR

LCD

VIDEO IN/OUT

IC3203

SELECTOR

DVD-LS91PP
OVERALL BLOCK DIAGRAM